INDIA RUBBER WORLD
CAOUTCHOUC GUTTA-PERCHA

Published on the 1st of each Month by

THE INDIA RUBBER PUBLISHING CO.

No. 15 West 38th Street, New York.

CABLE ADDRESS: IRWORLD, NEW YORK.

HENRY C. PEARSON, Editor

Vol. 45. FEBRUARY 1, 1912. No. 5

SUBSCRIPTIONS: $3.00 per year, $1.75 for six months, postpaid, for the United States and dependencies and Mexico. To the Dominion of Canada and all other countries, $3.50 (or equivalent funds) per year, postpaid.

ADVERTISING: Rates will be made known on application.

REMITTANCES: Should always be made by bank or draft, Postoffice or Express money orders on New York, payable to THE INDIA RUBBER PUBLISHING COMPANY. Remittances for foreign subscriptions should be sent by International Postal Order, payable as above.

DISCONTINUANCES: Yearly orders for subscriptions and advertising are regarded as permanent, and after the first twelve months they will be discontinued only at the request of the subscriber or advertiser. Bills are rendered promptly at the beginning of each period, and thereby our patrons have due notice of continuance.

Entered at the New York postoffice as mail matter of the second class.

TABLE OF CONTENTS ON LAST PAGE OF READING.

RUBBER AND THE WEST INDIAN CONFERENCE.

THAT rubber planting should prove itself in the Middle East through a tree that was essentially South American, has always been somewhat anomalous. The logical place for its beginnings, and indeed its first successes, should have been in the great and fertile countries "next door" to Brazil, where climate, labor, and law are just as favorable as in the British possessions. For a variety of reasons the Guianas and the fertile tropical islands of the Caribbean did not grasp their opportunity, and it passed—for a time. The West India Conference, however, would seem to show on the part of governments and planters a belief that there was still an excellent chance for rubber planting, and that the lost ground might be regained. There was a notable gathering of agricultural experts, governmental officials and planters at the week's session that has just been closed in Trinidad. A wealth of information on climates, soils, cultural methods and experiments was brought out in essays, addresses and discussions. Indeed, the conference may well be considered epochal in that it marks a definite practical resolve on the part of the West Indies to contribute their share in the development of rubber properties.

TWO ADDRESSES BEFORE THE RUBBER CLUB.

IN another part of this issue we devote several pages to a full report of two addresses delivered at the Rubber Club dinner, recently held in New York; one by the president of the club, concerning a number of matters of interest to rubber men, and the other by Congressman Weeks, on the monetary problems of the United States—a subject of importance to all classes of business men.

President Hood spoke of the desirability of increasing the club's usefulness, and as a step in that direction, of extending its membership among the important factors of the industry all over the country, so that it might become more adequately representative of the whole American rubber trade, and not wear, as at present, so distinctively an Eastern complexion. The special lines of usefulness indicated by the speaker were an organized effort to effect the standardization of the great varieties of crude rubber now offered the manufacturer, and concerted action looking to the proper adjustment of tariff regulations relating to rubber. Both of these problems are of commanding importance to the trade, and it would certainly seem that the Rubber Club of America ought to be an efficient agency for their solution. The statement that the executive committee of the club, at its December meeting, had authorized the president to appoint a committee to submit at the next annual meeting in April such revision of the constitution and by-laws as will permit the club to engage in these undertakings, is important as showing that the first step, at least, has been taken in the serious consideration of these matters.

The address of Congressman Weeks, a member of the Monetary Commission of Congress, on the monetary situation in the United States, brings into prominence again the unhappy limitations of our present system, and the urgent necessity, if American commercial life is to enjoy continued health and immunity from panics and other disorders, for a reform of some sort in our currency and banking conditions. Panics may be the time of golden opportunity to speculators who are in a position to avail themselves of the misfortunes of others, but for the business world at large they are disastrous and greatly to be deprecated.

Whether the bill reported by the Monetary Commis-

sion is the best possible solution, may be a proper subject for argument, but it certainly is worthy of the serious attention of every member of the business community.

PROSPECTS OF RUBBER PRODUCTION AND CONSUMPTION.

IN the various advance estimates which have been recently made of prospective conditions in 1916-1917 (when the rubber area now planted will be productive), prominence has been given in Germany to the prediction that the output of plantation rubber will by that time have reached 110,000 tons. To this amount should, of course, be added the quantity represented by wild rubber (at present about 65,000 tons) which would give a total of about 175,000 tons, or over twice the present production.

Consumption, based on a German estimate of a yearly increase of 10 per cent., will by 1916 have only reached about 110,000 tons so that there would apparently be at that time a surplus of 65,000 tons to be taken care of. It is, however, assumed that a consequent fall in value would lead to a considerable increase of demand, and that rubber would be used for purposes from which its price and fluctuations have hitherto excluded it.

INCREASED MALAYA RUBBER EXPORTS A REALITY.

THAT the increase in Malayan rubber exports is proceeding with "leaps and bounds" is further illustrated by the official report of the Imperial German Consul at Singapore, dealing with the first six months of the year just past.

During that period the total Malayan shipments had amounted to 8,349,397 pounds, as compared with 5,276,791 pounds during the first half of 1910. That the increase during the subsequent period has been to even a larger proportionate extent, is proved by the figures recorded in another column of this issue, according to which the quantity for eleven months of 1911 exceeded 19 million pounds.

In the above-named consular report, allusion is made to the opinion widely entertained in Singapore, that the rubber production in this and in the following years will not be as large as generally anticipated, many companies having failed to reach the yields estimated by their reports. From the figures of 1911 it would, however, seem that the increase of output is at present making steady progress.

RUBBER AND THE ABANDONED FARM.

WHEN Charles Goodyear gesticulated that fist-full of rubber and sulphur against the hot kitchen stove some seventy-odd years ago, he never dreamed (and he was an irrepressible dreamer) of the thousand ways in which the beneficial influences of that act would ramify. If, for instance, he had been told that fifty years after that time many of the New England farms would be abandoned because of the inability of their owners to eke out a decent living from them, and that a few years later, because of his rubber, sulphur and hot stove, many of these deserted farms would be restored and retenanted, he probably would have believed it, as he had an abiding faith in the vast possibilities of his discovery, but it would have been absolutely impossible for him to explain how it was going to happen.

But precisely this very thing has happened. From fifteen to twenty-five years ago a great many of the old farms scattered throughout New England and the Middle States were totally and hopelessly abandoned. The older generation born and reared on these farms had passed away and their descendants found it either impossible to extract a reasonable living from the soil, or else discovered that they could materially better their financial condition by migrating to the town or city and working in the shop, store or office. As a result, the old homesteads, untenanted and unkempt, fell into dreary decay, the generous barns gradually sagged and collapsed and the once cheerful homes gave shelter only to an occasional tramp.

The new farming of the great West, with its broad, level fertile fields, making it possible to engage in agriculture on a vast scale, with all the improved machinery, rendered it impossible for the little farm up on the stony New England hillside to survive. The man from town in his cross-country rides deplored the unhappy estate into which rural life had fallen, and saw many an abandoned spot which attracted him for its summer possibilities, but, being fifteen or twenty miles from town, as far as its practical usefulness to him was concerned, it might have been in Alaska.

Then came the automobile, made possible by its rubber tires, and the whole situation was changed. The farm a dozen miles from a railway station or twenty miles away from a thriving town, was no longer out of the world, but could be reached in an hour's time. The stony acres which had proved so poor in potatoes, and so meagre in apples, were discovered to be exceedingly rich in pure

air, sweeping view and wholesome outdoor life. The manufacturer, banker or business man of the distant town found that he could be a farmer for an hour before breakfast, and be at his desk at the accustomed hour of nine.

As a result, these abandoned spots all over the East have taken on new life; the old houses have been repaired, enlarged and made into comfortable and picturesque dwellings, and the barns have been pushed into perpendicular, or, more frequently, entirely rebuilt, and for a good part of the year at least, these spots, so recently inhabited only by the rabbit and the partridge, are now the habitation of happy and healthy humanity.

And this has been done on a vast scale all over the region of the once abandoned farms, and done solely through the elimination or, at least, the minimizing of distance by the rubber tire. The effect has been exactly as if a private railroad had been run from the nearest town to the front door of every farmhouse.

The automobile and accessory shows, held in January in Madison Square Garden and the Grand Central Palace, New York, were signally successful whether viewed from the standpoint of the exhibitor or the spectator. The exhibits were comprehensive and well displayed, the attendance large, and the general interest most gratifying. The auto-car, both for pleasure and for commercial use, has now become such a recognized feature in modern life that its use is bound to increase with every year for a long time to come—which means more tires (doubtless the output in 1912 will reach close to 4,000,000 tires) and more work for rubber manufacturers and rubber planters and gatherers.

THE DAY OF PLASTIC MASSES.

IF the Napoleonic saying, that "the art of governing is rooted in the ability to surprise" is true, then modern chemistry makes a strong bid to rule our destinies.

Habitually we endow the alchemist with uncanny power, yet it must be admitted that his successor, the chemist of today, has performed greater magic. He has stripped such terms as indigo, vanilla, musk, and even silk of the mystery of their creation, and by his hand the common, everyday substances around us, yield commodities hitherto exotic and rare. Who, in the days of our boyhood, would have pinned his career to such an article as coal-tar? And yet, of only one coal-tar product, synthetic indigo, Germany manufactured $14,500,000 worth in 1910.

Then, too, one must admire the genius that called forth from the air those nitrogen-compounds, all important for agriculture, and upon the existence of which cheap food depends. If, as experts hold, the Chilian nitre beds will give out within 30 years, where would such countries as the United States, which annually consumes nitre to the value of $15,000,000, and Germany, which consumes $34,000,000 worth, get their nitrate. That question has been answered—"From the air!" Now we know that the whole German demand could be met from the volume of air which overlies two acres of land.

There is now 180,000 h. p. electrolytically employed in Norway alone for this purpose. From their works in Notodden and Rjukanfos Falls the Badische Company and their partners will supply nearly half the demands of Germany. They have built a new town, Saaheim, to harbor 10,000 to 12,000 people, and their turbines are driven by water, falling from a height of 1,050 feet through ten big flumes, built side by side, like giant organ pipes, on the front of the precipice. The history of these achievements is closely interwoven with the position held by india rubber in modern industrial development.

In the group of artificial plastic masses, celluloid, the pioneer, still holds its own with unabated strength, after an existence of about 35 years, though for some uses rivaled in commercial importance by acetylcellulose, now prominent as the raw material for photographic films used in the moving picture trade. As the daily output of the plain films from both materials exceeds 300,000 yards, or 90,000,000 per annum, this article alone, at 10 cents per yard, represents $9,000,000. In other applications acetylcellulose supplants ivory, amber, and horn, and is used in the industry of prepared papers, for wax cloth and waterproofing, for coating cotton threads, as an insulation for thin copper wires, where it surpasses silk, for artificial silk, etc. We understand that Germany manufactures the bulk of this plastic, while our country has the largest output in films, with Germany a close second. Acetylcellulose calls for *cotton, common salt and acetate of lime* as principal raw materials. Therefore improved methods should lower the cost, which is still about two and one-half times that of celluloid.

The artificial silk industry, with an annual output of 5,000 to 6,000 tons, equals 20 per cent. of the natural silk. A number of different plastics administer to its demands.

Viscose, likewise worked into filaments for textiles, occupies a position apart, and is also used for horn imitations and notions.

Galalith, the product of casein and formaldehyde, belongs again to another class.

The youngest member in the family of plastics is *bakelite*, having stepped into a position of assured importance within the comparatively short period of three years. These substances and a number of others, are daily met in a variety of uses, sometimes supplanting one another, and frequently taking the place of hard rubber. They are not substitutes; they stand individual and alone, and often perform a certain function specifically and better than anything else could. They affect portions of the rubber trade in varying degrees, beneficially, where a more far-reaching technical effect is attained by them.

Thus the new high voltage insulators have made it possible to transmit the current over 100 or 200 miles, thereby creating a demand in distributing appliances of low voltage, which otherwise never would have come into existence. Beneficial also is the appearance in the market of new articles and notions, to which the modern plastics through their special adaptability have given rise; for the rubber manufacturer, having the customers, and being already in possession of the market, forms the most natural channel for the supply of these goods—if he takes them up. On the other hand, these new masses, backed as they are, by an unprecedented chemical activity, and ever growing cheaper, may invade his own field, and in a measure supplant rubber.

Clearly the rubber manufacturer cannot afford to stand wholly aloof; he must concern himself more or less about the nature and uses of these new bodies. The mackintosh manufacturers accepted the shower-proof process, although it did not employ rubber, and made it profitable. Perhaps the day may come when all of the valuable plastics may be manufactured in rubber mills.

BRAZILIAN CONDITIONS.

IN view of the relative incompleteness of recent Brazilian advices, special interest attaches to the views expressed by Mr. J. Henry Hirsch, of Adolph Hirsch & Co., New York, and who was a member of the Brazilian Rubber Congress, who has lately arrived from Brazil.

Three points are specially prominent factors in the Brazilian rubber situation: The conditions affecting cost of producing rubber; the measures proposed for remedying these conditions, and the course of production itself.

For the purpose of accurate comparison, both South American and Asiatic rubber need to be brought to a common standard of agricultural, as distinguished from commercial, value. In this way the heavier expense represented by the transport of provisions, supplies and products in South America, as compared with Malaysia, would be clearly shown, thus indicating the points to which official efforts might appropriately be directed, with a view to securing economy in price, without thereby diminishing the share reverting to the original producer.

Judging from this standpoint, Mr. Hirsch is inclined to consider that out of a nominal cost of $1.25 per pound for Para rubber, 75 cents would be represented by the carriage on supplies and products, only 50 cents being left for the planter. As these expenses in the case of Malaysian producers are upon a much lower scale, they can naturally make a profit, where the South American planter under similar price conditions would make a loss.

These conditions being thoroughly recognized by the Brazilian Federal and States governments, the question of the remedies to be applied has for some time engaged their attention, with the result that a plan was officially drawn up and ratified by the August congress of various States at Rio de Janeiro (as reported by the INDIA RUBBER WORLD in the issue of October, 1911, page 7). This plan has since been formally submitted to the Federal Congress, which dissolved at the end of last December. In common, however, with many other government measures, it was deferred, owing to the obstructive tactics of the opposition, and will be dealt with in April next, by the new Congressional body now being elected. As the disturbing factions will, it is expected, be eliminated, and the government will have a clear majority. Mr. Hirsch considers that the early adoption of the proposed reforms is assured.

As to production generally, his opinion is that any increase of the Asiatic yield will for the coming year be met by a corresponding reduction in that from Brazil. He is, moreover, inclined to think the Asiatic estimates of the more distant future will prove to have been excessive, by reason of reduced plantings and the possible appearance of disease. "What assurance is there," he asks, "that the soil will retain unimpaired in the quantity which has been assumed, the constituents necessary for the production of rubber? How are we to be sure some diseases may not in the future cause as much injury to the Asiatic rubber trees as the *Phylloxera* inflicted upon the French grape vines?"

Mr. Hirsch does not see that prices are likely to descend below present level, while various causes might lead to an advance.

The rubber gatherers in the Amazon are chiefly natives of the States of Ceara and Maranhão. Since the fall of prices in the Amazon territory, a number of them have directed their energies to other occupations, while few, if any, new recruits have gone into the rubber districts. The effect of these conditions will be seen in the diminished crops this year from the Amazon.

According to Mr. Hirsch's report, his experience of hiring Barbados laborers has been unfavorable. In April last he took 59 men from that island for his rubber estates in Bahia, but now has not one of them in his employ. The men ran away by degrees, which result proved to the satisfaction of Mr. Hirsch and his superintendent, who had found they gave a poor return for their wages.

The steamer *Verdi* by which Mr. Hirsch came, brought 1,457 bales of *Manicoba* rubber consigned to Adolph Hirsch & Co., which is understood to have been the largest individual shipment ever received of that quality.

PLANTATION VERSUS WILD RUBBER.

IN discussing the question of rubber supplies, the "Gummi-Zeitung" remarks that Brazil is no longer the sole rubber-producing country, but that other countries are working under different conditions, so that therefore Brazilian minimum prices do not affect the question. Not only is considerable progress being made in other lands (such as Africa, East India, Central and South America) in the production of natural crude rubber, but the production of plantation rubber is constantly increasing in India, Malaysia, Africa, South America, etc., and threatens to develop an appreciable competition with wild rubber

Pure Pará rubber, it is added, is today being used on a diminished scale, and the requirements in that grade can in a few years be almost exclusively covered by plantation rubber, so that (according to German opinion) the prospects of the consumption of Brazilian wild rubber are unfavorably affected by the above facts. Plantation rubber, it is urged, competes with wild rubber, inasmuch as it costs less to produce and wild rubber can only retain a competitive position if the cost of its production is reduced. Efforts to keep up the price of wild rubber are therefore all the less likely to succeed, while the under-estimation of the future importance of plantation rubber would be a very great mistake.

There are today over 700,000 acres being cultivated with rubber, of which 450,000 acres belong to Eastern Asia and its islands. According to a report of Plantation Director Strauss at Molive (Kamerun), there are in England and the English colonies over 1,200 companies engaged in rubber planting, with a nominal capical equaling $250,000,000.

That this competition is growing is illustrated by the fact that the shipments from the Federated Malay States for the first ten months of the last three years were: 1909, 4,831,823 lbs.; 1910, 9,824,605 lbs.; 1911, 15,443,154 lbs.

While Germany has a relatively large capital (equaling $12,500,000) invested in rubber culture, its development is as yet too recent for notable success to have been achieved. Still, satisfaction is expressed at the fact that the German colonies already furnish an appreciable quantity of crude rubber, not only of medium qualities in wild varieties, but also in plantation rubber of Pará grades. During the year 1909 German East Africa alone exported 218 tons of plantation rubber and 255 tons of wild rubber. The German colonies in 1910 had the following acreage in rubber German East Africa, about 41,000 acres; Kamerun, about 10,000 acres; New Guinea, about 5,500 acres; Samoa, about 2,000 acres; Togo, about 375 acres.

Of this acreage about one-sixth is in bearing. The aggregate exports from the German over-sea territory of india-rubber and gutta-percha amounted to: 1909, 2,150 tons, value $2,875,000; the value for 1910 having been about the equivalent of $3,750,000

Regret is expressed at the short-sighted policy by which a number of German plantations with good prospects have been sold to English capitalists. What will happen in 1916-17 is thus discussed. "Whether, then, wild, plantation, or artificial rubber will play the principal part is only a question of price. The victory will lie with the material which gives the manufacturer the best quality at the lowest price."

MELLO BRAZILIAN RUBBER.

In explanation of the relatively unsatisfactory results of the year ended June 30 last, notwithstanding the collection of 261 tons of rubber, the directors of De Mello Brazilian Rubber Company report that it was found necessary to write off as irrecoverable a sum equaling $244,715 from the debts owing to the company.

Coagulating by Carbonic Acid.

[Our good friend, Wilhelm Pahl, of Dortmund, Germany, sends us the following regarding the use of his new re-agent for the coagulation of the latex of the *Hevea Brasiliensis*. It will be noted that he calls plantation Pará rubber *Hevea* rubber, and the wild product Pará rubber.]

HEVEA (cultivated) rubber has gained the victory over Pará rubber. The mystery, which has up to the present day been hanging over Pará rubber, has been disclosed. The efficacious agent in coagulating Pará rubber has been discovered. Finally, it has been possible to replace the manual Pará coagulation by an *ideal mechanical coagulation*.

The science of chemistry has obtained the victory and torn the veil which had been hanging over Pará rubber. The whole rubber world and all the *Hevea* plantations have thereby gained an enormous advantage. It has been discovered that *carbonic acid* is the agent which ensures to the cultivated rubber the victory over all procedures heretofore employed. .

The advantage which *Hevea* rubber now possesses, compared with Pará rubber, is best discerned by examining both methods thoroughly and by comparing their advantages. The new rubber combines the advantages of *Hevea* rubber and those of Pará rubber and shall consequently receive the name of "*Hevea-Pará.*"

Science—and, first of all, chemistry—has been endeavoring for decades to discover the agent which during the process of smoking gives to the Pará rubber obtained from the *Hevea* latex its strength, elasticity and superior quality. The most distinguished men of all civilized nations participated in these researches. During 1910 Dr. Frank and Dr. Marckwald, of the Chemical Laboratory, of Dr. Henriques Succ., Berlin, devoted themselves to this question. To this end they procured a few nuts of the Urukuti palm tree used for smoking Pará rubber, submitting their smoke to a close chemical examination. They discovered all sorts of substances, but did not find the most vital agent. We propose to submit hereafter the whole procedure of smoking to an exhaustive examination.

The rubber latex having been collected in the wild forest by the *seringueiros*, should now undergo the process of the extraction of the valuable Pará rubber from the latex. With this end in view, the *seringueiro* gathers dry wood, kindles a fire and then puts some nuts of the Urukuri palm tree upon it, thus obtaining a very dense smoke. Now, it is not difficult to reply to the question, why the *seringueiro* employs the Urukuri nuts. These nuts are an excellent material for maintaining a good fire, because (1) they have an exceptionally hard shell, woodlike, thick and dry, and (2) they have rather oleaginous kernels.

It is difficult to find in a tropical wild forest dry wood, owing to the high degree of moisture in the air, and the wood having grown quickly and being soft, decomposes rapidly in many cases, which makes it a poor combustible. The palm tree nuts, however, give a perfect fire. The oil of the kernels serves to feed the fire, and it is a common experience that by burning dry and hard wood the best products of combustion are obtained. As is known, every hydrocarbon burns to carbonic acid and water. The smoke is more or less a secondary symptom and serves during the smoking process chiefly as a carrier of the carbonic acid which is drawn upward by the smoke; otherwise the carbonic acid would remain below, being heavier than air. The smoke contains also by-substances valuable for preservation, such as creosote, but this is less important than that in the present case it is the carrier of the carbonic acid.

Now it must not be lost sight of that the object of the smoke is to coagulate the latex and not, as has often been done, to smoke rubber, the coagulation of which has already been achieved. It must further be taken into consideration that the *seringueiro* pours the latex during the smoking procedure only while it is fluid over the stick, and to this end always makes fluid again such rubber as has already coagulated previous to the smoking procedure. It is obvious that this liquid latex must coagulate instantly, as otherwise it would again flow off. All trials hitherto made with the reagents found in the smoke never had the result of coagulating the latex instantly. It is solely the carbonic acid which causes the instantaneous coagulation.

WILHELM PAHL'S RAPID COAGULATOR FOR *Hevea* LATEX BY CARBONIC ACID.

The valuable properties which distinguish the Pará rubber produced by the smoking procedure are:

1. Its elasticity ("Nerve").
2. That it keeps as carbonates the valuable metallic salts contained in the latex, and which are so very important for the consequent vulcanization.
3. That it or the serum contained in the rubber reacts alkaline.
4. That it has no tendency to turn moldy.
5. That it never rots.
6. That it never oxidizes.
7. That it contains rubber molecules of an extraordinarily high polymerization.
8. That, consequently, it vulcanizes extremely well.
9. The very great viscosity of the solution and the yielding quality resulting therefrom.

The *Hevea* rubber hitherto produced by the plantation possessed *none* of these valuable qualities. This is most astonishing, in view of the fact that the tree from which the latex is collected is the same as the one from which Pará rubber is obtained i. e., "*Hevea Brasiliensis.*"

This "*Hevea*" has been exported from Brazil and transplanted under the same tropical condition and the same soil-qualities,

especially to the Straits Settlements, where it developed to an exceedingly flourishing plantation tree. Since this tree furnishes a highly valuable product in Brazil it must, necessarily, give the same product in its new habitation, provided that the coagulation takes place under the same conditions. Owing to the enormous size of modern plantations it was, however, absolutely impossible to introduce the manual extraction of Pará rubber in the Straits. Therefore such methods of coagulation were adopted as would make it possible to extract the rubber by machinery, but by means of which an equally valuable product can never be gained. First of all acetic acid was found to be an agent which permitted an easy mechanical extraction of a product which, however, had great defects. The most serious defects are the following ones, viz.:

1. The coagulation with acetic acid takes too much time. According to the doses which are added to the latex its coagulation requires several hours, and in many cases even a whole day. If a quick coagulation is to be obtained, very large quantities of acetic acid must be employed. Now as regards the rubber produced with the aid of acetic acid it becomes gelatinous during the coagulation process, which is to be attributed to the fact that the rubber molecules do not receive sufficient polymerization.

2. Acetic acid also does not prevent the rubber thus obtained from getting mouldy very quickly, owing to the damp hot air in the tropics.

3. The rubber has no elasticity (nerve), and in consequence is inferior.

4. A very serious drawback of coagulation with acetic acid is that the metallic salts, which are of so great importance for the vulcanization, are precipitated as acetic salts. Now, these acetic salts make the rubber soft later on when it is to be used.

5. If acetic acid is used in quantities, small crystals like sand are developed in the rubber, and these crystals are precisely the injurious acetous compositions of the otherwise valuable metallic salts of the rubber.

6. The rubber coagulated with acetic acid has but a very inferior viscosity, which is the best proof that the polymerization of the rubber is the worst imaginable.

7. Further, the subsequent vulcanization does not furnish the valuable product of the Pará rubber. From the very beginning the rubber is lacking in elasticity (nerve). If up to the present plantation rubber coagulated with acetic acid has been able to fetch about the same high price as Pará, this result can *not* be attributed to the excellent quality of the *Hevea* plantation rubber, but solely to the fact that the rubber is put on the market in a clean and dry state without any loss in washing. If the values of Pará rubber and *Hevea* rubber are to be compared it must be taken into consideration that Pará has 18 to 20 per cent. loss in washing (locked up serum), while plantation rubber does not sustain any loss in washing.

If they had continued to proceed with the extraction of plantation rubber in this direction (although the attempt has been made to change it by having recourse to all kinds of coagulation methods, which, however, consisted always in strong acids) then plantation *Hevea* rubber would constantly have remained in the background.

All this has been changed at one blow by the important discovery of carbonic acid as coagulation agent of the latex. For the whole plantation industry this discovery is the most important made in decades. The most remarkable part of it is the discovery that carbonic acid alone is the efficacious agent which conferred on the Pará rubber its past superiority. This discovery is very important, because plantation rubber in future produced in the simplest way imaginable by machinery is thereby so much improved that it far surpasses the wild Pará rubber in *quality, purity and strength*. In order to distinguish this new rubber from Pará rubber and the plantation *Hevea* rubber hitherto obtained by strong acids, it shall be called *"Hevea Pará,"* which name it well deserves. The valuable qualtities realized by the use of carbonic acid are the following:

1. Carbonic acid coagulates the latex instantly. The latex is an emulsion of fluid rubber particles in conjunction with vegetable albumen. The reaction of carbonic acid on these albuminous vegetable substances is so vehement and efficacious that as a result the different rubber particles unite suddenly with the greatest vehemence, which bestows on the rubber obtained an exceedingly strong polymerization. The *Hevea* rubber thus produced possesses all the valuable qualities of Pará rubber.

2. The *"Nerve,"* tensile *strength* and *elasticity* are superior to the same qualities in Pará rubber.

3. One of the chief advantages of *"Hevea Pará"* lies in the fact that the valuable metallic salts of the latex are contained in the rubber as carbonates, just as with Pará, for they had been precipitated by aid of carbonic acid.

4. *"Hevea Pará"* also is alkaline, for carbonic acid, as is well known, does not disturb the alkaline qualities.

5. *"Hevea Pará"* possesses the same viscosity and yielding quality of the solution, and vulcanized furnishes the same valuable product as Pará.

6. Coagulation by carbonic acid is the cleanest process and gives the purest and lightest product.

7. The smoke, however, mixes many coal-particles with the Pará rubber.

8. *"Hevea Pará"* never becomes mouldy, because the acid precipitates the vegetable albumen contained in the latex, and thereby destroys the whole fostering soil for these bacteria.

9. *"Hevea Pará,"* just like Pará, can neither decay nor oxidize.

10. The rubber coagulated with acetic acid is quickly covered with a bluish colored coating. This is due to the fact that the albumen still contained in the rubber in spite of the acetic acid, decomposes rapidly under the influence of light and climate, partly forming phenols at the same time. The phenols give the bluish color to the rubber and depreciate it to second quality.

11. Carbonic acid renders it feasible for the first time to employ just as for Pará, a gas for the coagulation instead of strong acids.

12. The employment of carbonic acid is exceedingly simple and may be entrusted to anybody. No exact weights have to be fixed, as in the case of acetic acid and all strong acids; each native may use as much carbonic acid as he likes. He never can do any harm to the product, the surplus of carbonic acid escaping as superfluous and inoffensive gas as soon as the spontaneous coagulation is finished.

13. Also the cheapest agent imaginable has been discovered in carbonic acid. The remarkable progress as regards the production and transport, enable the rubber plantations to procure for themselves a good, valuable and cheap coagulation agent.

It is possible to produce 2 kilos of carbonic acid with 1 kilo of coal, whence the cheapness of carbonic acid follows.

14. Carbonic acid can be procured in all tropical countries because artificial carbonic waters are consumed there in almost every small town.

This new carbonic acid process has been patented in all countries, as it is of eminent importance for the whole plantation industry and for the whole rubber world, because at one blow it ensures the victory over Pará rubber to the *Hevea* rubber. Owing to the patent having been registered, every forbidden utilization, of course, will be punished by law, and every *"Hevea Pará"* produced illegally without license will be confiscated on the strength of the patent law. It is very easy to ascertain by an analysis whether rubber has been produced with the aid of the new process or not.

Rubber Planting at the London International Rubber Congress.

IN these days of close investigation, a large part of the benefit resulting from technical congresses is derived from the careful study of the addresses, not only by those who have had the good fortune to be present, but by the far larger number dependent on their subsequent reproduction in printed form. In this way the proceedings acquire new life and become of permanent value to the cause of scientific research.

More particularly do these considerations apply to the recent London International Rubber Congress, which formed the culminating point of the International Rubber and Allied Trades Exhibition. In the volume just issued, "The Rubber Industry," Dr. Joseph Torrey, and Mr. A. Staines Manders, the editors, have rendered notable service by the reproduction in groups of kindred subjects, of nearly forty lectures and addresses delivered on that occasion, as well as of the subsequent discussions. Taken in conjunction with the Official Guide Book and Catalogue (containing forty-five copyright articles), the new volume serves to perpetuate the exhibition and to render it of permanent value to the economic student and the rubber manufacturer.

An appropriate commencement of the volume is furnished by the address of the president, Sir Henry A. Blake, delivered at the opening of the conference on July 3, in which he drew attention to the estimate that since the last conference (in 1908) the area planted with rubber in the Middle East had risen from 450,000 acres to more than double that figure, while South and Central America and East and West Africa probably show increases in equal proportion. He added that in estimating the probable output of the increased acreage, a considerable deduction should be made on account of plantations established under unsuitable conditions of situation, soil or climate. While the planter had up to the present pinned his faith mainly on the *Hevea Brasiliensis*, or Pará rubber tree, the sometime despised *Manihot Glaziovii*, or Ceara tree, is, according to his information, about to have its vogue. He had heard from a reliable source of at least one Ceara plantation which had begun to yield its harvest at two years' growth, while great improvements had been made in its tapping, which is a different proposition from that of *Hevea*. As to Synthetic rubber, he urged that the demonstrated possibility of its production should emphasize the necessity of strict economy and of aiming at reducing the cost of production of plantation rubber.

The "Introduction—Historical and Descriptive," written by Dr. D. Spence for the first volume, has been reproduced, forming a valuable basis for the addresses reported. Besides an introduction of a general character, it contains a summary of the different forms of coagulation. A further interesting section of the introductory chapter is a table of all the important brands of rubber, their geographical and botanical origin, and (as far as known) their analytical and technical constants.

THE RUBBER PLANTING PROBLEM AS IT PRESENTS ITSELF IN DIFFERENT COUNTRIES.

"Rubber in Uganda" is the title of a retrospective and prospective paper by Mr. R. Fyffe, first assistant, Botanical, Forestry and Scientific Department, Entebbe, Uganda Protectorate. He dealt with the increase of Uganda rubber exports from 68,000 pounds in 1902, to 105,000 pounds in 1909, this increase being due to the working of *Funtumia elastica*. Following the discovery of that species in Uganda, steps were taken to preserve the trees; the forests containing them, which are fortunately large, being leased only to responsible companies, which have to observe regulations brought out by the government for the purpose of conservation. From details quoted, Mr. Fyffe, however, deduces that although mature *Funtumia* forest trees yield rubber in payable quantity, this is not a plant to be recommended for cultivation, more especially when its rate of growth and yield are compared with that of Pará and Ceara rubber trees. With exotic rubbers of proved plantation value in other countries the prospect is said to be encouraging, and it is hoped that before the exports of indigenous rubbers materially decrease, large areas of these will be in bearing. The growth and yield of some at an early stage are extremely gratifying. Within the last year *Ceara*, which has been grown for ten years in the country, has been recognized as a valuable rubber-yielding tree, and worthy of extended trial. In thus expressing commendation of Ceara rubber, Mr. Fyffe disclaimed any intention of attaching less importance to Pará, as he considered there was a great future in Uganda for both varieties. Pará he would recommend as a permanent crop, while for a quick return he would prefer Ceara. The former, however, is the stronger tree, and would withstand the effects of oft-repeated tapping better than would Ceara. Owing to the liability of *Castilloa* to attack from a native beetle, Mr. Fyffe considered it extremely improbable that any success would attend the cultivation of that species in Uganda.

In the discussion which followed the reading of Mr. Fyffe's paper, Dr. Preuss expressed the opinion that *Hevea* is from every point of view better for cultivation than *Funtumia*. Dr. Schidrowitz, while recording his experience of finding *Funtumia* exceptionally rich in rubber (having found as high a proportion as 45 per cent.) admitted that as a plantation species it has many disadvantages compared with *Hevea*. The question of the distance at which trees should be planted (suggested by Mr. Fyffe's paper) was discussed from different points of view by various experts, including Messrs. Wickham, Wycherly and Petch.

Another paper of interest was that of the Colonial Government of Madagascar, which was taken as read, dealing with results obtained at the Tamatave experimental station.

M. C. Hugot, lecturer at the University of Bordeaux, read a paper on "The West African Varieties of Latex and Raw Rubber," in the conclusion of which he remarked there is no agreement as to the chemical and physical tests rubber must undergo, regarding which the same progress has not yet been made as with steel. This is due to the neglect to apply physical methods to a substance which is never found twice exactly the same.

"The Rubber Problem in French Western Africa" gave Dr. Aug. Chevalier an opportunity of showing what had been done in the direction indicated. He cited the absence of technical data as to rubber cultivation on the west coast of Africa, as having deterred French capitalists from that field. He urged the establishment of botanical and experimental institutes in such a way as to provide for that region the advantages of that character enjoyed by the Middle East.

In his paper on "The Rubber Plantations in French Cochin China," M. André Cremazy, president of the Board of Agriculture of Cochin China, reported that *Hevea Brasiliensis* had there acclimatized remarkably well, the trees attaining in five years the necessary girth for tapping (20 inches), at a height above the ground of 40 inches. The government of Cochin China had made regulations very favorable to planters, with the view of developing the cultivation of *Hevea*, all that is now lacking being European capital.

The important question of the "Planting and Production of Rubber in Ceylon" was treated in detail by Mr. Kelway Bamber, who stated that the average number of rubber trees per acre in Ceylon may still be taken at about 150, and that for those countries now planting *Hevea*, the wisest policy would be to plant at least

100 trees per acre, a careful selection of seed being made from trees with the best yielding variety of bark. With reference to the question of manufacture (which had been illustrated by a cinematograph exhibition), Mr. Bamber remarked that as one manufacturer prefers one form, and others different forms for their various purposes, for some time crêpe, sheet or block will be required. What planters should strive for is an article not only uniform in appearance, but also uniform in quality and vulcanizing properties.

In a lecture illustrated by lantern slides, Mr. F. A. Stockdale, B. A. F. L. S., gave an interesting account of rubber and balata cultivation in British Guiana, with particular reference to the trials made at various experimental stations and elsewhere. The cultivation of *Sapium Jenmani* had been commenced in 1905, and trees cultivated in the northwestern district are now fruiting regularly. Two distinct kinds are to be found, very closely allied and yielding a high-grade rubber. Experiments with *Castilloa elastica* have so far not been generally satisfactory, but further experiments are contemplated with other varieties of *Castilloa*. The growth of *Funtumia elastica* has been fairly satisfactory and the quality of rubber obtained good, though quantity small. Pará rubber looks particularly promising on the heavier lands near the Demerara river.

Balata tapping was likewise illustrated and described. Exports of balata for the first nine months of the year 1910-1911 had been 1,086,214 pounds, as compared with 979,426 pounds for the same period a year earlier.

With regard to available Crown lands, Mr. Stockdale stated that out of 52,777,000 acres of land in the colony, 36,401,000 are forest-covered, hilly and rolling lands, while of the balance 10,880,000 acres are easily accessible, and fully 9,000,000 of these unalienated from the Crown. Much of this last named area is suitable for rubber cultivation.

Under the title of "The Rubber Industry of Peru," Mr. Emilio Castre gave a detailed account of progress in the Peruvian rubber industry. Production had increased from 1,700 tons in 1902, to 2,801 tons in 1909, having meanwhile touched 3,027 tons in 1907. Regarding the future of the industry, he expressed the opinion that Peru would, under all circumstances, maintain its present production of rubber, preserving all plants producing wild rubber, while improving methods of extraction and coagulation. The Peruvian product being identical with that of the Basin of the Amazon, enjoys a distinct advantage from having to bear an export duty of one-third that on Brazilian rubber.

As dealing with the home of Pará rubber, much interest attaches to the paper read by Dr. J. Huber, Director of the Museu Goeldi, Pará, on the "Rubber Trees and Wild Rubber Reserves of the Amazon." In the first place, he called attention to those rubber trees of the Amazon which, although yielding second-class rubber, represent, nevertheless, most valuable reserves of wild rubber. He further defined the regions in which *Hevea Brasiliensis* is most abundant, as well as the localities where certain other species are produced, yielding in some instances second-class rubber, classified as "borracha fraca," or weak rubber.

Of all the Amazonian species of *Sapium*, at least a dozen, only *Sapium Tapuru* has been until now recognized as producing a good rubber. These *Tapuru* or *Murupita* trees form an important rubber reserve, being very common in certain parts along the main river and the lower course of its affluents, where *Hevea* is scarce or does not grow at all.

Very important as an actual and future reserve of wild rubber is the caucho tree, or *Castilloa Ulei*, not very different in vegetative character from the *Castilloa elastica* of Mexico and the Central American species. In Dr. Huber's opinion, as every river has proved to be rich in caucho, the reserves of that rubber will prove to be enormous. That its output is being increased is shown by the figure of 349 tons in 1895, having risen in 1910 to nearly 8,000 tons.

As the governments cannot prohibit the present destructive exploitation method applied to caucho, without checking the whole industry, it is suggested that they should create some large forest reserves in the most accessible caucho districts, so as to prevent the extinction of this very useful tree, whose product, if well prepared, can compete with the best *Hevea* rubber. In these forest reservations, methodical experiments of replanting and tapping could be conducted for a future regulation of this industry. In the subsequent discussion of Dr. Huber's paper, Messrs. Wickham and Terry, as well as Dr. Stevens, Dr. Esch, Dr. Tromp de Haas and Dr. Sandmann, took part. The last named speaker called attention to the necessity of discriminating in statistical returns between exports of *Hevea* rubber and caucho, an increase having been principally noted in the latter.

In reviewing the comments made, Dr. Huber referred to the improved communications now being established with the southern part of the Amazon region, which form the principal headquarters of *Hevea Brasiliensis*.

The papers to which reference has been made cover the general question of "The Rubber Planting Problem as It Presents Itself in Different Countries," and thus afford a bird's-eye view of the situation in various parts of the world. The other papers read dealt with various important subjects affecting the administration of plantations, cultivation, vulcanization, mechanical tests, etc., which call for more detailed notice, while the statistical features of the case formed the theme of the papers read by Mr. Ernest Hecht and Mr. W. Tinnock.

THE AGRICULTURAL CONFERENCE AT TRINIDAD.

THE editor of THE INDIA RUBBER WORLD, who is at present in the West Indies, attended by invitation the West Indian Agricultural Conference held in Trinidad, January 23 to January 30, inclusive. The programme covered papers and discussions mainly connected with work of experiment and research of the principal crops of the West Indies and British Guiana. An important feature of the conference consisted of addresses on Rubber Cultivation, Demonstration of Matters Relating to Rubber at the St. Clair Experiment Station, etc. Delegates were present from the Royal Botanic Gardens, Kew, the Imperial Institute, British Cotton Growing Association, the West India Committee, the Entomological Research Committee, the Rothamsted Experiment Station, the Imperial Department of Agriculture for the West Indies, the Department of Agriculture for Jamaica, the Agriculture Society of Jamaica, the Department of Agriculture for British Guiana, the Department of Agriculture for Dutch Guiana, and the Department of Agriculture for Trinidad. Delegates were present from nearly all of the West Indian Islands, and the conference was of unusual interest and value. The editor of THE INDIA RUBBER WORLD was courteously made an honorary member of the conference, and is preparing a special report on its rubber features.

RUBBER MANUFACTURERS AS PLANTATION OWNERS.

German (as well as Russian, English and American) rubber manufacturers have for a long time owned rubber tree forests, the product of which, however, is excluded from consideration as to the rubber industry in general, finding a direct outlet in the manufacture of the respective owners. This form of supplying requirements in crude rubber is, however, of relatively limited application. The reason, as it has been remarked, is that a rubber factory, as a rule, cannot limit itself to one description of rubber, but requires different kinds in order to produce the desired compounds. The most important point in rubber manufacture is the right selection and mixing of the most suitable descriptions; plantations of their own serving at most to supplement the other supplies of manufacturers and not rendering them independent of the rubber market.

THIRTEENTH ANNUAL BANQUET OF THE RUBBER CLUB OF AMERICA

AT THE WALDORF-ASTORIA, NEW YORK, JANUARY 12, 1912.

Thirteenth Annual Banquet of the Rubber Club of America.

DESPITE the fact that the dinner of The Rubber Club of America, held at the Waldorf-Astoria on the twelfth of January, was the thirteenth gathering of its kind, it was a highly successful event, and thoroughly enjoyed by all who had the good fortune to be present.

This is one of two occasions in the year which bring together members of the various branches of the rubber trade and allied lines, from all over the country, for the purpose of social intercourse, the renewing of old friendships, and the development of many new ones.

The purposes and general history of the club have been so comprehensively exploited that it would be superfluous to indulge in further reference thereto at this time. Suffice to say, that it is the social storm center of the trade in this country; that it has done and is doing much for the promotion of good fellowship; and has likewise been a happy force in the regulation of abuses and the advancement of the material interests of the rubber trade.

The members of the club and their guests commenced to gather about 6:30 p. m., with a constant increase in numbers from that time on. Shortly after the hour scheduled to begin they filed into the Astor Gallery, where the ceremonies were formally opened by the president of the club, Mr. Frederick C. Hood, who welcomed the members and guests, who for some indefinite period thereafter discussed a most appetizing dinner. Joy was unconfined. At the conclusion of the gastronomic feast Mr. Hood read a very interesting paper on "The Standardization of Rubber," and subsequently introduced the first invited speaker of the evening, the Hon. John W. Weeks, Congressman from Massachusetts, who favored the club with an exposition of "The Work of the Monetary Commission," and whose remarks were very much enjoyed and applauded. Incidental to the opening of Mr. Week's speech he made an allusion to the "Kellys," which, it seems rather unnecessary to state, had reference to the two immortals whose tour of the dining room to highly appropriate music, has become a recognized feature of Rubber Club banquets.

Mr. Weeks was followed by William H. McElroy, whose topic was "Optimism," and who amply vindicated the theory that certain brands of optimism are reflected in the presentation of the choice of two evils, by the acceptance of both.

Succeeding Mr. McElroy was Charles William Burrows, of Cleveland, who spoke on postal problems, and dilated at length on the injustice practiced by an unduly influenced postal administration, in its obvious partiality for publishers of periodicals to the detriment of the public in general, and the bookseller in particular.

Mr. Burrows' speech concluded the addresses of an enjoyable evening, which was enlivened by intermittent song, and the thirteenth annual banquet passed into the history of Rubber Club celebrations.

We give herewith in full Mr. Hood's paper and the speech made by Congressman Weeks.

ADDRESS OF THE CHAIRMAN.

FELLOW members and guests: My first pleasure is to acknowledge my appreciation of the honor of being your president.

Each honor and each pleasure brings its responsibilities. So, as I pondered over the responsibilities of the president of The Rubber Club of America, I naturally turned to the constitution and by-laws. The by-laws adopted for the New England Rubber Club were admirably suited for the purposes of that club. When the New England Rubber Club grew up to manhood and became The Rubber Club of America, the by-laws remained unchanged, except in some minor details, the principal change being in Article II, which reads as follows:

> "The Rubber Club of America is established for the promotion of social intercourse among gentlemen connected with the rubber industry, and the furtherance of educational and scientific research in india-rubber production and manufacture."

This evening is an illustration of Article II. We have had sociability in wine, food and song. We shall soon listen to some results of research from our guests. But should this club limit itself to sociability and research as its chief end and show itself as a living creature only at one annual, formal, midwinter dinner, and at one annual, informal midsummer outing—enjoyable as they are and successful as they are in creating and fostering not only personal but business friendships? Are there no other useful functions? Isn't it axiomatic that a thing to be permanently useful must be permanently productive?

It is almost paradoxical to say that when a thing stands still it goes backward. The statement is, anyway, true of those things that live; for a living thing that stands still certainly goes backward in comparison with other living things.

So, as I pondered, one thing seemed clear. The responsibilities of your president and directors are those assigned by the constitution and by-laws. In December there was held a meeting of the Executive Committee of the club, composed of its directors and officers, to discuss the various functions that might be assumed by the club, and also to discuss whether it was advisable for the club to undertake the assumption of other functions than those prescribed in the by-laws.

So your directors talked over several functions that the club might assume for its own good, and they were clearly in favor of recommending to the members that the by-laws and constitution be revised. Accordingly, a committee will be appointed for that purpose, in time, so that the suggestions for the revision can be acted upon at the next annual meeting of the club, to be held in April next.

There certainly can be no objection to the club's having a constitution that will permit the club to be useful as well as ornamental. It does not have to be useful because it has the power to be, any more than it is necessary to spend all one's money because one has money in the bank. But we will all agree that it is wise to have money in the bank, for we may have use for it that cannot be foreseen.

If the adoption of a revised constitution and by-laws would tend to bring the nominating committee into a feeling of increased responsibility, so that they would make nominations that would bring in more of the men from representative concerns all over the country, such a revision surely would meet the approval of all of us.

It is interesting to note that out of nine directors, four are from Boston, four from New York, and one from Akron. It is also interesting to note that of the two hundred and sixty-four members of this club, one hundred and fifty-five are from Massachusetts, fifty-two from New York, twelve from Connecticut, twelve from Rhode Island, five from Ohio, and three from Pennsylvania. The proportion of membership from Massachusetts is gratifying, but it is not proportionately representative of the rubber industry. An effort should and will be made to add to our membership men from all representative concerns dealing in rubber throughout the United States. If the club should decide to revise its constitution, so that the directors could undertake the solution of problems other than sociability and research, the directors would probably decide whether the problem was one for solution which they ought to undertake. And if they decided affirmatively they would probably appoint special committees adapted for work on that particular problem.

Our common interest is rubber. So in our directors' meeting in December, our first thoughts were of rubber, and naturally we talked of Pará rubber. We spoke of the multitude of sins the words, "Pará Rubber" cover. Who can say what the words mean? Many would say rubber from the *Hevea* tree. But when one says *"Hevea,"* does he mean *Hevea Brasiliensis*, or some one of the nineteen other kinds of *Hevea* mentioned in Henry Pearson's book? There are fifty-seven —or, more likely, one hundred and fifty-seven—varieties of rubber that come within the law of the present definition of

Pará rubber; because there is no definition, no law, no standardization of kinds, names, qualities, or really defined customs or descriptions. These hundred and fifty-seven varieties of Pará rubber from the various islands and rivers of Brazil and countries of South America—not to mention the numberless kinds of plantation rubber masquerading under the name of Pará, coagulated and adulterated in such ingenious ignorance—should make us "stop, look, listen," and consider if it is not possible in some way to standardize or classify the varieties, if we only went so far as to properly name them so as to enable the dealer to properly represent, sell and deliver, and the manufacturer to properly use, manufacture and distribute his manufactured goods, so that gatherer, dealer, manufacturer and the public shall gain through the integrity of the standardized crude.

Let us consider four agents used for coagulating so-called plantation Parás. Acetic acid has been very generally used. An alum solution has been slightly used. A patented solution of hydrofluoric acid called "Purub" has been used. An agent called "Martinol" is also being used, this "Martinol" being a wood product containing acetic acid, methyl alcohol and phenol.

Then, let us consider how these plantations are sorted in London. Just think of receiving in a shipment of a single ton of so-called biscuits and sheets, rubber that has been coagulated by all four of these agents! And how can one expect uniform cures from such ununiform parts?

I think an approach can be made for a basis of the solution of the problem of classifying, or standardization, or naming rubber, if we recognize and admit freely that manufacturers do really sort and standardize rubbers used by them, and if we recognize that each manufacturer knows as much as his competitors. An able manufacturer once said to me that he had come to the conclusion that his secret methods were simply old-fashioned methods.

The development of all manufacturing today is along the lines of science, and the ascertaining of truth—which is science. An industry, like a city, can increase its growth and importance and integrity by the use of practical science.

The dealer will profit by standardization or classification, because he can deal in classified, standardized rubbers—as well as unclassified—for we all know that values seek their levels.

The manufacturer will profit by his ability to reduce his factor of safety for his quality, for the whole is only the sum of the parts, and if the parts are not uniform, the whole cannot be uniform. His factor of quality safety is reduced by the standardization of the parts.

We are all interdependent. If you sympathize with these thoughts on classification, the question arises as to the method of procedure. President Grant's statement applies here: "The way to resume is to resume." "But how?" one might ask. There are so many ways it is difficult to choose the best. First of all, I remember a saying of a well-known lawyer, "Advice not paid for is worth what you pay for it." Therefore, there must be an appropriation subscribed by dealers and manufacturers; for sometimes work not paid for is worth what you pay for it! With a modest appropriation to start with, there are many agencies to select from. There is, for instance, the rubber section of the Society of Chemical Engineers. There is the Produce Exchange of New York. There can be a special committee of practical men, including chemists and dealers. There are so many ways to spend money after one has it! But we must have it before we spend it. And then, again, if all interested will subscribe to such a fund, all will be interested in the solution.

So the question is, "Is this a proper problem to be solved, and who is interested in solving it?"

It was the unanimous belief of your board of directors that an attempt should be made to start the ball rolling, but that the ball should not roll too fast; that one kind of rubber should be standardized, or classified, or named, first; and that the work of classification should not proceed too swiftly.

Your president was voted the power of appointing the committee, of which he should be one. But he has purposely not appointed any associates to such a committee, preferring to speak frankly in regard to this matter at this dinner, and then await the comments that will surely follow.

Another practical and important function that this club could assume is in respect to the tariff. There are gathered here many manufacturers who are competitors, but this is one time when we can gather together and forget that we are competitors.

The rubber industry of the world can be logically divided by countries, and while all manufacturers of all countries are more or less interdependent, we are members of The Rubber Club of America, and are here to foster the rubber trade of this country. We certainly do not want to assume any functions that will conflict with the interpretations of the Supreme Court in regard to the "Restraint of Trade" clause. The old adage, "All Frenchmen are Frenchmen when they leave the shores of France" applies to us. We have a common interest that so long as we are reasonably economical and industrious we should have a reasonable tariff against foreign nations, to protect ourselves against indiscriminate dumping of their excess stock or of their unbranded or misbranded "jobs."

There is probably no industry approaching the volume of business of the rubber industries which safeguards the public as much as the rubber manufacturer does. Every manufacturer adopts his own trade marks and puts them on his products. As the theory of the trade mark law is the protection of the consumer, a manufacturer's brand is the consumer's best guarantee of quality.

It is well known that during the discussions leading up to the passing of the present tariff law, the individual rubber manufacturers who appeared in Washington were asked if they represented any organization.

Working under the old by-laws, the directors decided that they had no right under those by-laws to appoint committees to represent the industry in Washington. It may prove useful if this club could appoint representatives to clearly state the

FREDERIC C. HOOD, PRESIDENT.

HON. JOHN W. WEEKS.

FRANCIS H. APPLETON, VICE-PRESIDENT.

needs of rubber manufacturers, and of dealers in not only crude and reclaimed rubber, but manufactured goods.

When one realizes that the total value of manufactured rubber products in this country is very close to $200,000,000, and that this country consumes approximately 50 per cent. of the total world's production of rubber, these facts deepen the feeling of responsibility in the minds of your directors and officers.

There are many other functions which your directors can assume for the good of this club, and it is the earnest belief of your president that a club to be permanent must be useful. (Applause.)

AMERICAN MONETARY PROBLEMS.

THE Honorable J. W. Weeks, who spoke on "The Work of the Monetary Commission," was introduced by the president as follows:

The pendulum of an old-fashioned clock steadies its internal working; but if the pendulum is forced to swing too far one way, it swings too far to the opposite side.

The violent swinging of the financial pendulum of credit has caused extravagant and fraudulent speculation on the one side, and terrible sufferings and panics on the other. The old-fashioned pendulum of credit should be modernized into a well regulated balance wheel. This regulation and safeguarding of credit and of finance has been the work of the Monetary Commission.

I have great pleasure in introducing to you Congressman John W. Weeks, of Massachusetts. (Applause.)

HONORABLE JOHN W. WEEKS, of Massachusetts:

Mr. President and Gentlemen: I feel very much complimented by your greeting.

I think I received about the same amount of applause as did Kelly when he appeared. (Applause.) And he is an extremely popular man on all occasions.

I am invited here to-night because I am trying to represent in Congress—being a business man like the rest of you—the president of your club and some of the other members who are present tonight.

Mr. Hood telegraphed me that he had never asked anything of me during the seven years that I had represented the district, and, therefore, he insisted that I come here to-night. That means that probably he had exhausted his reserve to get other public men from Washington, and I was the last choice. (Laughter, and cries of "No, Sir!" "Oh, no!" "Absolutely no!") But I am so accustomed to being last rather than first in such matters that that does not trouble me in the least.

I am going to discuss a very dry subject, but I hope it will have some bearing on the last paragraph in your president's address; that it may indicate something to you which will be useful, as well as otherwise, in making this club perpetual.

I shall talk to you, probably, until I see that you are tired of hearing what I say. My speeches are not speeches at all. They are talks. They can be cut off at any point, like a bologna sausage, without in any respect breaking the continuity of the string, or the effect of what has gone before, or what might come after. (Laughter.)

In 1907 you will all recall that we had one of our periodical panics. When Congress convened, a month or two after the height of the panic, the first thing that was done was to appoint the Committee of Banking and Currency in the House, the Finance Committee of the Senate, and set them to work trying to frame a solution of our banking and currency problems.

I had been, and was at that time, a member of the Banking and Currency Committee of the House. After working several months we brought forth what was known as the Aldrich-Vreeland Commission bill, a bill which everybody admits was not perfect in any respect, and which has not been used anywhere for any purpose, but which, in my judgment, would be extremely useful, if we had a panic, before we got permanent legislation. That bill provided for an issue of emergency currency, based on commercial paper—the first recognition of the issuing of currency on commercial paper which we have had in this country. There are five hundred millions of circulation printed, stored in a vault, in shares which may be used by you and all other business men if we happened to get into trouble and needed more circulation than we have in the ordinary course of affairs. That bill also provided for what is known as the Monetary Commission, to consist of nine members of the Senate and nine members of the House. We have been, as a result of that, at work for some three and a half years trying to bring about a result which would solve these great questions.

In 1844, when presenting the Bank Act to the Commons, Robert Peel used this language, which I will read:

"There is no contract, public or private, no engagement, national or individual, unaffected by it. The enterprise of commerce, the profits of trade, the arrangements made in the domestic relations of life, are all affected by this question submitted to you for your consideration."

That was a proposition to change the method of note issuing in Great Britain. We have undertaken not only that, but we have undertaken the much larger problem of changing our banking methods, by establishing banks in foreign countries, of changing the method of making paper, so that we may have bank accepted bills, of changing the location of our reserves to some extent, and more than all, providing for a central organization which will be supplemental to our present banking system.

We found that there were many weaknesses in our system. It is not the worst system in the world, as Mr. Carnegie said in his rambling testimony yesterday before the Steel Investigation. (Laughter.) But it is a system which does not respond to the needs of business in critical times, and it does not permit our extending our operations as a world power, as a financial world power, so that we may compete with our competitors successfully. And those are some of the questions which we have considered.

In the first place, there is no elasticity in our present circulation. We have something like a billion, six hundred millions in gold and gold certificates outstanding; something like five hun-

FRANK D. BALDERSTON, SECRETARY.

HAROLD P. FULLER, ASSISTANT SECRETARY.

J. FRANK DUNBAR, TREASURER.

dred millions of silver; about seven hundred millions of national bank notes secured by government bonds, as you know, and three hundred and forty-six millions of greenbacks. The greenbacks are limited by law to three hundred and forty-six millions; the gold is limited by the amount of gold that comes in for coinage; the silver is limited to the present outstanding by law, and the only elasticity which we are able to get is in the national bank notes. We have over seven hundred millions—some seven hundred and twenty millions outstanding to-day. There are but little more than nine hundred millions of government bonds outstanding now. Therefore, all but about two hundred millions of our government bonds are now in the National Treasury, held as a basis for circulation of bank notes outstanding. Therefore, we cannot extend very much more in that direction; because it would be impossible to get the bonds. Many of them are held by savings banks and trustees, in such ways that they would not go on the market under any conditions, and that is the only remedy we have for issuing additional circulation when you, gentlemen, require it in your business.

Then, we found—and already knew, of course—that our reserves were not properly placed. You know that country banks are required to keep fifteen per cent. of their deposits in reserve, of which 6 per cent. must be in their own vaults, and nine per cent. may be with reserve agents. Banks in reserve cities must keep twenty-five per cent. of their deposits in reserve, one-half of which must be in their own vaults, and the other half may be with reserve agents. Central reserve cities—New York, Chicago and St. Louis—must keep twenty-five per cent. of their deposits in their own vaults.

The result of that is that the reserves of the country gradually get into the hands of the banks in the central reserve cities, and that is especially true when business throughout the country is slack and money cannot be used to advantage at home.

Not only do the reserves gradually centre in New York—which is our great financial centre—but also the surplus moneys which country banks have is either sent here to their reserve agents, because they can get two per cent. for it, or else is sent here to be loaned—likely to the customers of the New York banks themselves.

Now, that was the condition in 1907. The money from the country had centered in New York to an unusual extent. The New York banks in order to take care of the money which came to them, in order to get a new dollar for an old one, naturally tried to loan it, because they are paying two per cent. for their balances. They must get two and a half or two and three-quarters per cent. at least for that money or else they are losing on it. The tendency, therefore, is to loan that money somewhere where they can get it back promptly in case there is necessity for it, and that tendency leads inevitably in this country to loaning on stock exchange collateral as security—on notes secured by stock exchange collateral. In other words, it is a temptation to create speculative use of the money at, perhaps, the expense of its commercial use. It is inevitable with our system that that should be so; because the New York banks cannot certainly obtain their loans promptly in any other way unless we have some other kind of paper in circulation in this country than we have to-day.

In 1907, when the country banks wanted to get their money back in the fall, they called for their surpluses in New York, and called for their reserves, and the result was the precipitation of that panic. Quite likely the country was ripe for the panic at that time. I think myself that it was. But I want to say that it was no fault of the New York banks that we had the panic, although the failures commenced here; because the New York banks, which at that time had something like a billion, one hundred and fifty millions of deposits, had two hundred and sixty, two hundred and seventy or two hundred and eighty millions reserve in their own vaults, which they were required to keep, but they had absolutely five hundred and fifty millions of bank deposits, and if the banks of the country had called on them for one half of the deposits it would have taken all the reserves they had. The result was that they commenced to call loans, and the calling of loans precipitated the sale of securities on the stock market, and finally created a panic in the stock market, which was followed by banks failing in New York. That frightened the country banks so that they not only drew home the money they needed, but they drew home more than they needed, and it was found at the end of the panic that they not only had their fifteen per cent. reserve, but, in many cases, twenty-five and thirty and forty per cent. reserve. The business men too, likely did exactly the same thing. I know large business enterprises in New England that carried twice the ordinary pay roll in cash all of the time so that they would not fail to be able to take care of their pay-roll when it came due, fearing that they might not be able to unless they kept themselves supplied; but, of course, keeping themselves supplied with a double supply added to the distress of somebody else. Then, frightened and foolish people took their money and locked it up in safe deposit vaults, and the result of the panic was widespread, and ended, as it always does, in the issuing of clearing house certificates.

Now, the issuing of clearing house certificates has just one effect—it clears the local situation at once; because it enables the banks in the central cities to pay their balances off by clearing house certificates, but it brings about distress in business all throughout the country, except local business.

Now, that was the result in 1907. If one of you gentlemen deposited a check in your bank on a bank in Dallas, Texas, and that check was forwarded to Dallas for collection, the probabilities are that your bank would get back word that it had been given credit for that check on the books of the Dallas, Texas, bank. Well, you wanted your money, and the result was that you drew on your bank, and the bank was obliged to make a forced loan. It had not received any return on that check, but it had to supply the money in some way to keep you going. The result was distress and breakdown and failure of business in all directions.

Then, again, there was no co-operation and is none today between banks. Every bank is jealous of every other bank. It is trying to get what business it can. It never comes to the rescue of the general situation through the issuing of clearing house certificates, until the distress becomes so general that every bank is fearful that there will be a general failure of banks unless that is done. Banks do not like to show their hands to their rivals; they don't like to say, "We need to issue clearing house certificates," even to their best friends in the banking business. There is absolutely no co-operation. The reserves of the country, as I have said, furthermore, are scattered from one end of the country to the other. A large percentage of them are in the vaults of the banks, which is just the same principle as we would have if we claimed that we had a national military reserve of five millions of men, because we have five millions of men in this country of military age. But those men are scattered from one end of the country to the other. They live in villages and cities here and there and everywhere. They are of no use as a defense to the country unless they are brought together in some co-operative way, and, therefore, you finally add much to the present difficulty by having a captain of each one of those little villages trying to get more men than another village to help him. We would have just exactly the condition which obtained in banks under such circumstances.

Furthermore, banks are prohibited by law from loaning money when they are below their reserve. If the New York City banks have a reserve of twenty-five per cent., and it should fall to twenty-four per cent., they are prohibited by law from loaning money. Be it said to their credit that they did loan money in 1907, and nearly every other bank was below its reserve. There were first-class banks in New York down to fifteen, and perhaps twelve per cent. in their reserve during the panic, and they had to do it or have a general collapse; but they were breaking the law when they did it.

I recall the story of a certain hospital, where, under the law which provided the means for supporting that hospital a certain number of rooms had to be maintained as emergency rooms under the law. They could not be used, but must be maintained as emergency rooms. Well, a building fell, or something happened in the neighborhood of that hospital, and inevitably a great number of people had filled up all the other rooms of the hospital, and then the superintendent said he would have to stop, because he couldn't use those rooms, for, under the law, they were emergency rooms and must be retained as such.

That is just as sane as to compel banks to hold their reserves after they have gotten down to the legal limit. The proper use of reserves is to have them where they can be used, and make use of them when the business community requires it. ("Hear!" "Hear!")

Now, those are some of the troubles which we found in our banking system, in our currency system.

Then, again, our currency, our bank note currency, is composed very largely—almost entirely, in fact—of two per cent. bonds. The two per cent. bonds are not worth par, or would not be if they did not have a circulation privilege behind them, and, therefore, if the circulation privilege should happen to be removed, those bonds, which cost the banks all the way from par to 110, would drop to perhaps about seventy; because our national debt has no definite date of maturity. They are a menace, not only to the community, but to the banks that hold them, and we have had to consider how we would get rid of those two per cent. bonds.

Well, now, about a year ago, after we had consulted with various authorities the world over, in all of the European countries, with the authorities of Canada and with banking men in this country, by direction of the Monetary Commission, Senator

Aldrich, its chairman, issued what is known as the Aldrich plan. It was a plan providing for a readjustment of these various conditions which I have outlined, and during the past year we have been giving hearings. We have been discussing the question before banking associations and before business associations. We have tried as far as possible to get the judgment of the very best minds on this subject the world over, and tried to apply to our system a system which, without upsetting it, would make our banking and currency system as modern and up-to-date and useful as are the systems of European countries.

The plan which was issued at that time, and which has been changed somewhat, and has finally been adopted in the report of the Monetary Commission, which was made to Congress last Tuesday with a Bill and Report, is an embodiment of the views of all of these people and the views of the sixteen members of the commission.

Now, I want to say for the commission, that we commenced the consideration of this subject without any very clear ideas, as individuals, as to what we ought to do; but we have been studying and studying, and reading and listening, until the sixteen men, coming from all sections of the country—three from the Rocky Mountain section, five from the South, three from the Middle West and five from the East—have come to exactly the same conclusion, and, for the first time in the history of the Government, we have a Monetary Report, a matter of the first importance to all classes of citizens, signed by every man on the commission, Democrat and Republican. Whatever may have been his views before, we have come to a uniform result. (Applause.)

And, furthermore, I want to say that there has been no politics whatever in the consideration of this question. (Applause.)

It is too big, it is too important to all elements of our people to allow politics to interfere in any degree with its solution. I think we have practically the uniform support of the bankers of this country of all shades and all locations in favor of this report. The American Bankers' Association has, and perhaps with reason, voted, with one dissenting vote, at its great meeting in New Orleans, in favor of the adoption of this plan. Business men throughout the country who have given it consideration have endorsed it. Financial students, and all other classes of men who have considered it from every standpoint, have given it unqualified endorsement, until we can practically say that the opposition to it which appears to-day is negligible. Therefore, the only thing to do is to get it on the statute books, and that is what we have before us, and that is the thing which I particularly want to call to your consideration; because it is up to you, and those you represent, and those that other representative bodies like yourselves represent, to see that legislation, which is of the greatest importance to you and all kindred business interests, and all other classes of interests, is enacted into law.

I have not the time, in the twenty or twenty-five or thirty minutes which I am going to talk, to go into any considerable detail in regard to this plan. But it provides for what is known as the National Reserve Association. Some people have said it is the United States Bank over again. I say it is distinctly different from the United States Bank, which was centralizing in its effect, while this is decentralizing in its effect. But I want to say of the United States Bank—and I say this carefully weighing my words—that if President Jackson could be credited with all of the good things which all of his friends claimed for him, and there is set against that the destruction of the second United States Bank, I think it would be a fair offset; for the United States Bank, if it had continued to exist, and had been modified and changed and brought down to date, we would have today, in my judgment, a banking system which would be as useful for our needs as are the banking systems of Europe, every country of which has a better banking and currency system than we have.

This central reserve organization is based on local associations similar to clearing house associations. There must be ten banks in each clearing house association, having at least five millions of capital, and twenty per cent. surplus, and so forth. I won't go into those details. But in electing directors of these local associations, each bank has one vote in electing two-thirds of the directors, and in electing the other third, the banks vote the number of shares which they hold. Every bank which is a subscriber to the National Reserve Association subscribes for twenty per cent. of its capital. The capital of the reserve association is to be twenty per cent. of the total capital of the banks of the country, which would be something like four hundred millions. Supposing all of the banks come in, it would mean—and we call fifty per cent. of this capital—it would mean one hundred millions of dollars, and we provide that the bank shall not be started until one hundred millions of dollars have been subscribed and paid in as fifty per cent. of the total capital subscribed.

Now, we have adopted the Federal system of electing directors. We recognized the fact that politics must be kept out of this bank, as it was not kept out of the second United States Bank, and that it must be beyond the possibility that any interest or any set of men shall obtain control of it. That has been the most important thing we have had to consider in connection with this whole subject, because it is a thing that the demagogue will seize to criticize, and it is a thing that the thinking man would seize to criticize, if we left anything for him to seize. And, therefore, we brought about this method of electing directors—that the local associations shall elect directors as I have instanced. And then we divide the country into fifteen districts, and we elect directors in those fifteen districts by electing one-half of them, each local association in that district having one vote; then, the stock owned by the banks in those local associations electing two-thirds as many directors as the banks voting individually, and then the other six of the directors shall be elected from the business, the commercial, the agricultural interests of the country by those directors who have been elected. And then, when we come to electing the forty-six directors of the National Reserve Association itself, we provide that the Government shall have an interest in it; because the Government has to do all of its business with this central organization. We provide that the Secretary of the Treasury, the Secretary of Agriculture, the Secretary of Commerce and Labor, and the Comptroller of the Currency, shall all be directors of this bank, giving the Government four directors. And then there shall be three more governmental directors—the Governor of the Bank and the two Deputy Governors of the Bank. The only politics that there can possibly be in this is that the President of the United States appoints the Governor of the Bank. But he appoints the Governor of the Bank from a list submitted by the Directors of the National Reserve Association, which list shall consist of at least three men. And if for any reason he removes the Governor of the Bank—as he might do—he must supply his place from a list submitted by the Directors of the Association. That is all the politics there is in it.

Now, we provided that the banks which subscribed to its stock shall hold this stock, but it is to belong to the association; it is not transferable to anybody. Therefore, in order to get control of the association it would be necessary to try to control all of the banks of the country, state as well as national. Of course, it is a perfect piece of folly to say that anybody would attempt the entire control of them, because they would not know what to do with them if they had control. And then it would involve more capital than would be possible for any combination of men to control, and would create a sentiment which would bring about the probable repeal of the charter. Therefore, we believe that we have absolutely eliminated both politics and the possibility of control by any such set of men from this organization.

Now, let me call your attention to one or two facts, which will directly affect the business interests which you represent, one of which is that we provide for a new kind of paper transaction; that is, a bank accepted bill.

Now, in the present system, you, as business men, go to your own bank and borrow money on your notes; or, if your credit is good enough, you sell your note to some other bank, but that note has only a circulation as far as you are known personally as a business man. It has not even a country-wide circulation. You could not sell your note, for instance, in the far West, unless you have a very big and very broad credit. In Europe they do things better, and we have provided for a similar method in this bill. For instance, once you establish the credit that you can get from your bank, you can go to your bank and by depositing collateral, or securing the bank in some other way, you draw a draft on your bank, the bank accepts the draft, and then that draft becomes current throughout the country; not because your name is on it, but because the bank has accepted it, and the bank is known not only in the country where it is located, but, quite likely, in other countries. The result of that is that in Germany, for instance, there is a vast amount of bank accepted paper of French origin and English origin. In France there is more commercial paper of this character of English and German origin. In England there is more or less French and German paper disseminated, the result being that when any business man wishes to extend his credit he gets his bank to accept his note, and then that note becomes current throughout not only his own country, but in other countries. It has another effect in Europe. When the balance of trade is against one of those countries, instead of sending gold to pay the balance of trade, as we would have to do, they send back some of this paper which originated in the country in whose favor the balance of trade happens to be, and save the shipping of gold back and forth. The net result of that is that every business man who has a good credit, would have a broader credit than today, or than would be possible for him to have under present conditions; because he not only has the credit of his own bank, but he has his name on a piece of paper which is accepted by his bank, or which quite likely will go to any part of the world. If, for instance, you

could get the largest banks in New York—any one of them—to accept your note, any other bank in the United States would be glad to buy that note, and would buy it, and would buy it if it were a short time note, instead of loaning its money on the kind of collateral which it must loan it on now. In other words, it would have a piece of paper which would sell current at any time, in any place. You would have a broader credit, every one of you, and you would get your money at a lower rate of interest.

You may say that that would reflect on the prosperity of the banks; but the fact is that France and Germany and England, where interest rates are very materially lower than they are in this country, the banks make quite as much money as do our banks; because they are enabled to keep their money at work all of the time in this way. The rate of the Bank of France, for instance, has not fluctuated more than two and a half per cent. for twenty years.

In the Boer War, and in our 1907 panic, the rate of the Bank of France did not get above four and a half per cent; it has been as low as two per cent. That certainly has not averaged higher than three and a half per cent. during this time. Now, while I don't anticipate that in a developing country like ours we would get as low interest rate as you would get in France or Germany or England, we would get more or less lower rates for business men who had good credit—would get materially lower rate, because the method would be followed if we adopted this system.

Then, we have provided for foreign banks. There is not a bank south of the Isthmus of Panama under American control; there is not a bank in the Orient, except in the Philippines, under American control. There is not a bank in Europe under American control. There are some branches of private banking houses of New York in Europe, but not in the other parts of the world. The result is that our foreign business is financed by European banks. It costs more for you to do that, and it takes away from us the prestige which goes with financing our own business. You know perfectly well that if you buy rubber in South America, that transaction is financed through a London or a Paris or a Berlin bank. If a tanner in the United States buys hides from the Argentine, the purchaser in the United States arranges for an acceptance of the draft through his own bank with a London bank, which goes through the South American bank to the London bank, and commission is paid to the South American bank and paid to his own local bank in this country, and a larger commission is paid your London bank. Millions and tens of millions of dollars are paid by the business men of this country to the bankers of Europe, simply because we haven't any means of financing ourselves in the Orient, in South America, or up-to-date means of financing ourselves in Europe. There is no American Exchange in South America; there is no American Exchange in the Orient. If we are going to develop our trade with these countries, as we should do, for we are only doing a small percentage of it, we must have suitable banking arrangements, and that is our reason for establishing these foreign banks.

Now, gentlemen, I have talked half an hour. As I said, it is an endless subject, but I want to impress upon you that, in my judgment, and in the judgment of every man who has given it consideration, it is the most important public question we have before us to-day, and it will remain the most important public question until you get behind your Representatives and Senators and compel it being put on the statute books.

Mr. Furman, the President of the First National Bank of Chicago, one of the ablest bankers, in my opinion, in this country, stated, in a public address the other day, something which I fully endorse. He says, "I am convinced that the National Reserve Association will become the largest, the strongest, the safest and the best financial institution in the world." I cordially endorse that statement.

If what has been proposed is done, we need have no more currency banks in this country. We will have financial depressions, as we always have had and always will have as long as business men over-expand and have to contract. Those will come at certain periods, but the currency bank will be a thing of the past. A financial bank, such as we have known, will be a thing of the past. Labor will not be thrown out of employment; capital will not be idle; the enormous losses which we have had as a result of the almost numberless panics since the Civil War, will be things of the past, and we will go on in the even tenor of our way, doing business as do our commercial rivals in foreign countries, being able to compete with them, because we have similar or equally good tools to compete with. (Great applause.)

THE MEMBERS AND GUESTS PRESENT.

At the speakers' table:

F. H. Appleton.
Hon. L. D. Apsley.
Ex-Gov. A. O. Bourn.
Charles W. Burrows.
J. H. Flint.
G. B. Hodgman.
F. C. Hood.
W. H. McElroy.
H. E. Raymond.
Robert L. Rice.
Homer E. Sawyer.
Hon. J. W. Weeks.
E. S. Williams.

At the other tables:

A

G. E. Alden.
T. V. Alden.
F. H. Appleton, Jr.
C. B. Archer.
H. G. Armstrong.
C. H. Arnold.
Harry C. Arnold.
W. H. Arnold.

B

Robert Badenhop.
C. J. Bailey.
Robert L. Baird.
T. W. Baird.
W. T. Baird.
F. D. Balderston.
Wm. E. Barker.
Chas. W. Barnes.
W. F. Bass.
T. W. Bassett.
E. A. Bates.
J. E. Bates.
H. H. Bedell.
A. O. Bourn, Jr.
W. Browning.
A. W. Brunn.
Ira F. Burnham.

C

E. P. Carpenter.
C. C. Case.
J. H. Chadbourne.
J. J. Chandler.
R. L. Chipman.
E. H. Clapp.
J. H. Clark.
Henry Z. Cobb.
Chas. A. Coe.
A. E. Cole.
D. S. Collins.
A. J. Conlin and two guests.
G. T. Cottle.
B. H. Currier.
D. A. Cutler and one guest.

D

Chas. J. Davol.
J. P. Devine.
E. F. Dewing.
Roy Dorr.
T. A. H. Dressel.
J. Frank Dunbar.
H. T. Dunn.
H. W. Du Puy.

E

R. M. P. Eagles and two guests.
C. F. Edgarton.

F

Eberhard Faber.
D. F. Feinberg.
H. K. Felton.
W. F. Field.
Frank Fox.
H. W. French and one guest.
H. P. Fuller.

G

C. A. Gilbert.
W. H. Gleason.
A. A. Glidden.
F. S. Goodall.
W. L. Gough and one guest.
Frederick Gove.
N. Lincoln Greene.
Mr. Grentert.

H

Geo. E. Hall.
Richard C. Hall.
C. F. Hamilton.
J. J. Hawkins.
Geo. D. Hazen.
H. T. Hering.
E. H. Hicks.
S. T. Hodgman.
A. N. Hood.
M. G. Hopkins.
Mr. Hopping.
W. C. Howard.
H. B. Hubbard.
E. E. Huber.
F. H. S. Hyde.

J

Ernest Jacoby.
J. T. Johnstone.

K

E. B. Kelley and three guests.
W. J. Kelly.
C. Kenyon, Jr.
Harry L. Kenyon.
Geo. Kenyon.
Wm. Keyes.
E. H. Kidder.
E. Krum.

L

F. T. Lahey.
Harry Laird.
Dwight C. Leeper.
S. G. Lewis and two guests.
P. H. Loewenthal.
R. M. Loewenthal.
Clarence H. Lowenthal.
R. A. Lowenthal.
J. S. Lowman and one guest.
G. A. Ludington.
J. P. Lyons.

M

L. P. Mac Michael.
Warren MacPherson.
Ed. Maurer and two guests.
A. N. Mayo.
John J. Meacham.
Otto Meyer.
W. H. Miner and one guest.
Henry Montgomery.
H. Muehlstein.

N

E. F. Norton.

O

J. E. Odell.
Mr. Onthank.

P

W. G. Page.
W. H. Palmer.
John S. Patterson.
F. H. Peaty.
Henry Perlish.
Geo. W. Perry.
E. F. Pfaff.
Wm. Poole.
W. L. Proctor.
Geo. E. B. Putnam.

R

Arthur Reeve.
Edward R. Rice.
W. G. Ryckman and two guests.

S

R. P. Sachs.
F. F. Schaffer.
F. M. Schwab.
H. D. Scott.
J. A. Scott.
R. F. Spencer.
Chas. F. Spratt.
H. B. Stedman.
Harold Stimpson.
Everett Stone.
Griswold Stowe.

T

A. B. W. Tallman.
L. H. Thomas.
A. D. Thornton.
O. S. Tweedy.

V

J. C. Van Cleaf.

W

E. E. Wadbrook.
H. F. Wanning.
Mr. Warner.
A. W. Warren.
Herman Weber.
George Weis.
W. Williams.
Chas. T. Wilson.
J. W. Work.

Z

A. Zeiss.

Tires in Garden and Palace.

THE Twelfth Annual Automobile Show opened at Madison Square Garden on the 6th of January, and the display of the various types of pleasure vehicles and automobile accessories was, perhaps, the most complete and elaborate that has ever been offered to the New York public. Every possible type of motor pleasure vehicle known, and every accessory, including the various devices that contribute to the building and operation of a motor car, was at hand in elaborate setting, the whole going to make one of the most brilliant and comprehensive exhibits ever made in this line.

Practically every American manufacturer of motor cars was represented, and it is safe to assume that few, if any, of the accessory manufacturers failed to make an attractive showing.

The tires shown probably covered every type and carried every improvement known up to the present time. While it is doubtful if any new principle was involved in the exhibit, there were a great many additions made to tires which had already acquired at least a national reputation, and the usual claims for the various merits of each vigorously exploited. A considerable increase in anti-skid treads was a feature of this year's show, although nothing radically new was shown. Tire vulcanizers of various sorts were also very much in evidence.

An appreciably increasing demand for demountable tire rims was evident, and was especially noticed in connection with the manufacture of high-priced cars, although rim manufacturers had exerted themselves to produce a rim that can be consistently used on a very moderate priced vehicle.

There are a considerable number of important manufacturers making pneumatic tires for automobiles in the United States, not to mention a great many that cannot consistently be so classed. The total annual production of tires in this country is claimed to be in the vicinity of 3,500,000, the year 1911 being the greatest in point of production since the inception of motoring, and it is generally assumed that during the current year all previous tire producing records will be exceeded. The tire-consuming public is afforded many and increasing opportunities to gain knowledge in reference to the tires that they are buying, as most of the large concerns issue literature periodically dealing with anti-skids, air-pressures, over-sizes, normal load weights, etc.

By a consumer covering a large annual mileage, literature of this sort might be digested with reference to his particular interests and in the promotion of a reasonable conception of the tire producer's end of it. It does not require much argument to indicate that knowledge of this sort on the part of a tire buyer would be mutually beneficial to himself and the tire maker, as there is no doubt but that numberless claims made upon the tire manufacturers are the result of careless and improper treatment of tires on the part of the consumer, which a proper understanding on the part of the user, of the make up and capacity of the tire would naturally obviate.

Much progress has been made in the matter of tire repair during the past year, perhaps the most important element of which is the re-treading process. Blow-out patches and numberless other emergency repair materials do much to increase the life of a tire, though after all the most effective way to dispense with the annoyance of a damaged tire is to acquire a new one.

The truck exhibit held at the Garden from the 15th to the 20th of January inclusive, really offered little of additional interest in the way of tire or rubber accessory exhibits. This particular display did, however, indicate the wonderful advance made during the year 1911 in the development and demand for the power truck, not to mention the significance of the showing made by the fire department.

It was demonstrated that actual sales of large quantities of heavy vehicles, especially trucks of three to five tons capacity, were a conspicuous feature of commercial vehicle progress for 1911, perhaps, a rather surprising phase of which was developed in the popularity of the electric-powered delivery vehicle.

Another and very gratifying element of the motor truck industry is the improvement in construction, fastening processes and the general adaptability of the truck tire, which is the outcome of special effort on the part of some of the more important makers of this product.

The exhibition opening at Grand Central Palace, running from January 10 to 17 inclusive, was most attractive, and housed in a structure that has no peer in this country as an exhibition building.

Virtually all, if not all, of the tires at the Palace show were in the Garden exhibition, and nothing new in the way of rubber accessories seems to have developed.

One of the particularly interesting exhibits was that of the Peck Wheel Company, of Chicago, showing a spring wheel to be used with a solid tire, the specific purpose being to provide for the resistance that would otherwise be created by the tension of the springs. Of course, its general purpose is the reduction of tire troubles.

THE EXHIBITS IN DETAIL.

AJAX-GRIEB RUBBER COMPANY, Trenton, New Jersey; representative, Mr. J. L. Hoffman; showing Ajax tires guaranteed for 5,000 miles.

BATAVIA RUBBER COMPANY, Batavia, New York; represented by Mr. Ashton Wheeler Caney; showing the Batavia Security-Tread anti-skid tire.

CONSOLIDATED RUBBER TIRE COMPANY, New York, New York, Mr. T. E. Roberts, representative; showed a complete line of Kelly-Springfield tires. This company also displayed its block tires which seemed well adapted for heavy commercial work.

CONTINENTAL RUBBER WORKS, Erie, Pennsylvania, Mr. W. J. Surrey, representative; had a very interesting exhibit embracing the Continental-Erie tube, the Liberty tube, Continental-Erie aeroplane tire and repair materials.

DAYTON RUBBER MANUFACTURING COMPANY, Dayton, Ohio, represented by C. J. Cross & Co., 1878 Broadway, New York City, showed Dayton airless tires carrying a 5,000-mile guarantee.

DIAMOND RUBBER COMPANY, AKRON, Ohio, Mr. F. T. Lewis exploited its safety-tread tire, the special feature of which was its skid-preventing property. The Silvertown Cord tire was also one of the specialties shown.

DOUBLE-FABRIC TIRE COMPANY, Auburn, Indiana, represented by Mr. R. S. Murray, offered a variety of tires and repair devices.

EMPIRE TIRE COMPANY, Trenton, New Jersey, whose interests were represented by Mr. J. M. Shackleford, displayed four interesting exhibits, in the Clincher tire, straight-edge oversize tire, Empire red tubes and Empire tire reliner; all of which were receiving their full share of notice.

ENDURANCE TIRE AND RUBBER COMPANY, New Brunswick, New Jersey, E. W. Tabor, representative; displayed a guaranteed red inner tube, claimed to be of unusual wear-resisting quality.

FEDERAL RUBBER MANUFACTURING COMPANY, Milwaukee, Wisconsin, represented by Mr. Marcus Allen; made an interesting display, including its smooth wrapped tread tire, "Rugged" non-skid and Federal inner tubes, and sundries.

FIRESTONE TIRE AND RUBBER COMPANY, Akron, Ohio, Mr. Daniel C. Swander representative, had an interesting and well-attended exhibit, including the well-known Firestone tires, inner tubes, rims and accessories, of which the Firestone quick detachable demountable rim attracted unusual attention. Firestone truck

tires need no introduction, and were shown in great variety, as adapted to every condition of commercial service.

FISK RUBBER COMPANY, Chicopee Falls, Massachusetts, Mr. J. J. Cothron. These tires were shown in various types, and, incidental to this exhibit, a booklet entitled "Veteran Fisk Tires" was distributed. This showed photographs of the company's tires which had been run from 6,700 to 17,000 miles, on various makes of cars, and is an interesting and significant document.

JAMES L. GIBNEY & BROTHER, Philadelphia, Pennsylvania, showed Gibney Wireless motor tires and vulchnizers.

THE B. F. GOODRICH COMPANY, Akron, Ohio. This company's interests were represented by Mr. W. H. Yule, the New York manager of the company, who showed the usual excellent Goodrich product, specializing in their New Master Tread tire. Incidentally this company distributed a publication entitled, "Nine Prophets and a Host of Truly Wise Ones," which is an exceedingly informing pamphlet, devoted to the merits of Goodrich tires and the esteem in which they are held by their numberless users. And last but not least, they distributed "The Goodrich," a monthly magazine, which will undoubtedly appeal to those interested in automobiling and tire buying. This company's demountable truck tire assembled for service on a S. A. E. truck wheel, is certainly of substantial construction, and received much attention.

GOODYEAR TIRE AND RUBBER COMPANY, Akron, Ohio, Mr. J. B. Maus, representative, offered an attractive exhibit of Goodyear tires and repair materials, and incidentally put forth a booklet entitled "The Care of an Automobile Tire," which contains considerable information useful to tire buyers. This company also showed several distinct types of truck tires, certainly of promising appearance.

HARDMAN TIRE AND RUBBER COMPANY, New York, N. Y., represented by Philip R. Straus, specialized in Sure-grip tires.

HODGMAN RUBBER COMPANY, New York, New York, made an attractive display of cloth for covering automobile tops, of the well-known Hodgman brand, as well as an unusually attractive rubber tubing for gas feeds which was shown both in running and moulded lengths.

LEE TIRE AND RUBBER COMPANY, Conshohocken, Pennsylvania, known for many years as manufacturers of druggists' sundries, are now offering the Lee "Zig Zag" anti-skid tire and the Lee red and gray tubes. They specialize in the Jelco-Atlas inner case, which is guaranteed to be absolutely puncture proof.

MOTZ TIRE AND RUBBER COMPANY, Akron, Ohio, represented by Mr. P. E. Bertsch, specialized in the Motz high efficiency electric cushion tires, especially adapted for use on motor vehicles.

L. J. MUTTY & COMPANY, Boston, Massachusetts, Messrs. E. P. Murray and R. R. Gurney, representatives; exhibited auto top fabrics, high grade rubber cloths, etc.

NATIONAL RUBBER COMPANY, St. Louis, Missouri; demonstrated "Tire-new," a liquid rubber dressing for the preservation of automobile tires.

NEW JERSEY CAR SPRING AND RUBBER COMPANY, Jersey City, New Jersey, represented by Mr. R. R. Fields; showed their one cure wrapped tread tire, and the company's well-known special red inner tube. They were also showing their new Arcadia gasoline hose approved by the Underwriters' Laboratories. The purpose of this hose is the conducting of gasoline from pump to auto tank.

NEW MASTIC TIRE COMPANY, 68th street and Broadway, New York City, Mr. Orrel A. Parker, representative; offered a tire-filling for replacing air in pneumatic tires.

PENNSYLVANIA RUBBER COMPANY, Jeannette, Pennsylvania, represented by Mr. J. C. McCullough; specialized in its vacuum cup tire. This company also makes the Pennsylvania aeroplane tire, said to embody all the necessary requirements of such a tire, size 20 by 4 inches, and it is claimed that two of these will carry a 1,000 or 1,200 pound flyer.

POLACK TYRE COMPANY, Jeannette, Pennsylvania, represented by Mr. H. L. Stockbridge, the New England manager of the company, offered a line of truck tires made under a German license in an American factory. Their literature indicated a long service product, one set in use by an English concern being said to have covered more than 50,000 miles.

PORTAGE RUBBER COMPANY, Akron, Ohio, Mr. W. W. Wildman, representative; exhibited its "Daisy" non-skid tire, Portage inner tubes and truck tires. This company exploited its line of truck tires to a number of interested visitors.

PRINCE TIRE COMPANY, 1675 Broadway, New York City, showed "Prince" tires.

REPUBLIC RUBBER COMPANY, Youngstown, Ohio, represented by Mr. Webb Booth; displayed its black line red inner tube, and Republic Staggard tread, both of which attracted the interested attention of visitors. A booklet combining the stories of the black line red inner tube and the Staggard tread was distributed at the booth. The truck tires of this company are guaranteed to give 8,000 miles of service, and evidently offered much of interest to prospective truck tire buyers.

RUSSIAN TYRE COMPANY, Incorporated, 981 Eighth avenue, New York City (factory, Riga, Russia), represented by Mr. Otto Braunwarth; showed the Prowodnik Pneumatic tire, guaranteed for 4,000 miles.

SEAMLESS RUBBER COMPANY, New Haven, Connecticut, represented by Mr. H. G. Pagani, made an attractive offering of its Seamless non-skid tires, and Kantleek inner tubes. The company's booklet on "The Seamless Automobile Tire," seemed to have many interested readers at the shows.

SHAWMUT TIRE COMPANY, Boston, Massachusetts; exhibited an attractive line showing the company's wrapped tread clincher, Shawmut block tread, inner tubes, and Shawmut molded floating flap, made for the protection of the inner tube, and to prevent chafing caused by the rough edges of the old type of flap.

STEIN-LAPLOCK TIRES, Mr. C. H. Loewenthal, representative, showed an attractive line of the regular lap-lock tires, Stein inner tubes, and Stein-Laplock tractors. This exhibit also comprised the Stein-Laplock Dunlop Tire, claimed to have an unusually strong basis of construction.

SWINEHART TIRE AND RUBBER COMPANY, Akron, Ohio, was represented by Mr. E. O. Hoopengarner, who talked interestingly of the various types of tires and of the pure gum tube made by the company.

UNITED STATES TIRE COMPANY, New York, New York, was represented by Mr. E. S. Rowe. This company operates several plants making popular types of tires.

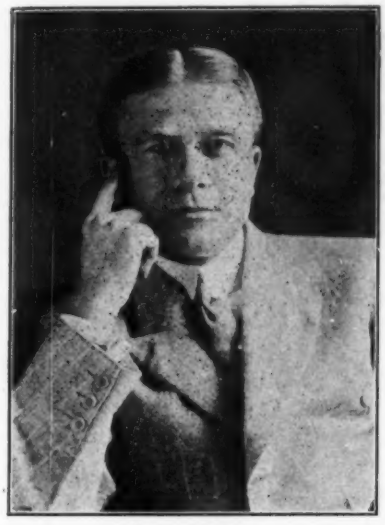
VOORHEES RUBBER MFG. CO., Jersey City, New Jersey, displayed a very complete line of rubber automobile accessories, under the name of the Voorhees "Ideal" rubber specialties. One of the features was the "Period" pneumatic plug, claimed to repair a nail puncture in a tube in five seconds. In addition to this, they showed their "Ideal" line of inner casings, outside boots, bumpers, gums and fabrics.

A NEW WAY TO TEST TIRES.

THE Jacksonville, Florida, representative of the Consolidated Rubber Tire Co., of Trenton, New Jersey, recently gave the people of his city an impressive demonstration of the strength of the inner tube of the tire he represents. He took a 32 x 4-in. inner tube, attached one end to the rear of a car, and the other end to another car which, with four passengers, had a total weight of 2,500 pounds. He then started the first car and using the inner tube as a hawser pulled the other car with its passengers over 15 miles of the city streets.

BANQUET OF THE MOTOR ACCESSORY MANUFACTURERS.

ONE of the most successful and best attended trade banquets of the season was that of the Motor Accessory Manufacturers, held at the Waldorf-Astoria on the night of Thursday, January 11. There were more than four hundred present, and there was no falling off of the festivities provided for their entertainment from start to finish.



HARRY T. DUNN.
President of the Motor Accessory Manufacturers.

The ceremonies were opened by Mr. H. T. Dunn, president of the Motor Accessory Manufacturers, who, after the formal opening, turned the duties of toastmaster over to Mr. James Clarence Harvey, the playwright, who said things which are not, ordinarily, published in Sunday School literature. His recitation of "Bohemia" seemed to appeal to the fancy of the diners, and helped to neutralize any icy blasts that may have blows in from outside.

The first address of the evening was made by Mr. William E. Metzger, president of the National Association of Automobile Manufacturers, who spoke on the benefits of co-operative endeavor and urged closer bonds and more frequent gatherings of those interested in the automobile industry.

Following the remarks of Mr. Metzger, was a happy speech by Mr. J. Hartley Manners, who regaled the diners on "New Thought," in reference to the automobile as an agent in bringing humanity in closer touch with the beauties of nature. Colonel George Pope was also among the speakers, and addressed the guests in his usual happy vein, his remarks being, as they always are, very well received. Another speaker, James Schermerhorn of the Detroit *Times*, devoted his remarks to the "political uplifting" of Gov. Woodrow Wilson of New Jersey. Last, but not least, Creswell McLaughlin, "the schoolmaster of schoolmasters," in his customary vein endeavored to relieve the diners of any disposition to become too Bohemian, and to advise them of the continuous necessity of affording, by precept and example, a high moral atmosphere for the youth of the country.

The dinner was generally conceded to have been most effective in promoting fraternalism in the organization.

DONE BROWN.

A well-known member of the Santa Claus Committee of the Cincinnati Business Men's Club, of Cincinnati, having for its object the distribution of Christmas presents, is W. G. Brown, formerly president of the Cincinnati Rubber Manufacturing Co., and now a well-known rubber broker of Cincinnati. Incidental to the conclusion of committee work, Mr. Brown was tendered a dinner and a near-gold watch, in addition to being voted the most popular man in Cincinnati. Mr. Brown, so our advice states, twelve years ago became "father of the present movement," and, if all accounts be true, has been exceedingly successful in gathering in presents ever since.

THE RUBBER TRADE IN BOSTON.

(By a Resident Correspondent.)

THE rubber trade of Boston and vicinity seems to be in first class condition, and the outlook for the present year, just opening, extremely encouraging. In mechanicals a better feeling is manifested, and orders are coming in more satisfactorily. The manufacturers of druggists' goods have had a successful year, and this state of affairs still continues. The rubber footwear trade, which was very backward up to January, has picked up wonderfully during the month, owing to the advent of real winter weather. The clothing trade has had an excellent year, and many of the leading manufacturers could have done more business had their capacity been larger. One leading concern has built an extensive addition to its plant, and is now working with an increased output. The makers of tires are busy, many being turned out on contracts, and in anticipation of a very heavy demand as soon as the motoring season opens. The demand for crude rubber is fair, with indications of a steady increase from now on until spring.

* * *

The Boston Woven Hose and Rubber Co. has had a very successful season, especially so in the garden hose department. To keep up with the requirements of this branch of the business, the company has enlarged that department and made such improvements as to increase its capacity nearly, if not quite, thirty-three per cent. In November the office force was transferred to temporary quarters in one of the big concrete buildings of the plant, and the brick structure used as the administration building was completely torn out and the roof removed, and even the window frames taken away, leaving only the four outside walls. Since that time the workmen have been busy, and the building is gradually assuming shape. Great changes are being made, and the new offices promise to be most convenient and especially suited for the comfortable conducting of the great business of this company.

* * *

J. S. Capen, who has had charge of the selling end of the business of the Converse Rubber Shoe Co. since its institution three years ago, has severed his connection with that company. His announcement of that fact states that the change is made with the best of feelings toward the company, and the hope that its future success may equal or exceed its past, which, he says is "going some!" Mr. Capen has just completed his quarter century in the rubber footwear business, having served seven years with Sage & Co., nine years with the Enterprise Co., six years with the Beacon Falls Rubber Shoe Co., and three years with the Converse Rubber Shoe Co. He is not yet ready to divulge his future plans to your correspondent, but undoubtedly he will soon be heard from in the business in which he has so long been engaged, and for which he is so well fitted. He ought to be good for another twenty-five years' steady work; and he is, though perhaps before that time he will become so enthusiastic an automobilist that business can't hold him.

* * *

The Converse Rubber Shoe Co. gets out some snappy advertising. As it sells its product direct to the retailer, it has developed a scheme to get telephone orders. It gets out a little book, small enough to be hung close to the telephone in the dealer's store, which contains several leaves of perforated coupons, each good for the fee for telephoning the factory for ordering goods. The company keeps most of its stock at the factory, but delivers its orders by automobile truck. The customer is requested to fill out a coupon, putting in the blank space the amount charged for the call, and to enclose all the coupons with the remittance for the goods, deducting the amount of the coupon from the invoice. The plan has proven a business-bringer.

Another change in the rubber shoe trade in this city is the resignation of Chester J. Pike from the management of the Congress Shoe and Rubber Co. to engage in another line of business. Mr. Pike is known to the rubber footwear trade all over this country, having been connected with the United States Rubber Co. as its Boston selling agent for many years. He left that company some time ago, and connected himself with the first named company, taking special charge of the selling end of the line of rubbers handled by that house. He originated the selling plans, mapping out the advertising campaign which brought success to the concern, and drew to himself the attention of the A. W. Ellis Advertising Agency, with the result that a very flattering offer was presented to him to connect himself with that establishment. He will now devote himself to preparing and planning publicity campaigns, mainly for the footwear trade.

* * *

A recent engagement announcement is likely to interest the many friends of Charles A. Coe, of the United States Rubber Co., and Chester J. Pike, whose recent retirement from the rubber business is mentioned above. These two gentlemen have been business friends and residential neighbors for many years, and now Mr. and Mrs. Pike announce the engagement of their daughter, Louise Gerrish Pike, to Kersey Fell Coe, second son of Charles A. Coe. Mr. Coe is stationed at Kobe, Japan, where he occupies an important position with the Standard Oil Co. Your correspondent understands that Miss Pike will journey to Japan, where the wedding will take place early next autumn.

* * *

The making room of a rubber shoe factory may not generally be considered as Cupid's headquarters, but then again it might. Two groups of three sisters each keep house on the co-operative plan in Belmont, and five of them work in the factory of the Hood Rubber Co., while the oldest of the six runs the house and acts as chaperone. On New Year's Day all five of the shoe workers announced that they were engaged to be married in the not far distant future, and plans are already being formed for a quintuple, or perhaps a sextuple, wedding. Meantime, it is said, applications for positions are coming into the making department from spinsters of certain and uncertain ages who find in this announcement encouragement for hope that the fashion may become epidemic.

* * *

Ever since the first of October, Friday has been a red letter day with the Hood Rubber Company Organization, for on each Friday evening the teams representing the factory and Boston office gather at the Old Colony alleys and have a session with the pins. The freight department of the Boston office teams holds all the records, except the individual single, and also has the lead on points won, having won 45 out of 60. All the first division teams are having a warm contest. The prizes are individual silver cups, and the season will end March 1.

* * *

Mention was made in this letter last month of the fierce rivalry of the teams of the Rubber Tire Bowling League. The tournament goes on apace, and the scores are piling up to rather remarkable figures, and fond hopes are swelling several manly bosoms regarding the winning of the several prizes offered. At the time of writing this letter the score stood as follows:

	Won.	Lost.	Pinfall.
Goodyear	23	5	8,561
Goodrich	22	6	8,808
Swinehart-Rep.	15	13	8,174
Diamond	13	15	8,075
Kelley-Springfield	11	17	8,071
United States	10	14	6,770
Fiske	8	16	6,832
Firestone	6	22	7,792

* * *

Work has been begun on the new $500,000 wing of the Museum of Fine Arts in this city, made possible by the gift of Mrs. Robert D. Evans as a memorial to Mr. Evans, who was well known in the rubber trade. With the completion of this addition, which will measure 312 by 95 feet, the available space will be increased more than one-third, and this museum will rank among the most important in the western hemisphere. This vast building is in the immediate vicinity of another beneficence of a rubber man, namely, the Forsyth Dental Infirmary, some account of which was given in the INDIA RUBBER WORLD of November, 1911.

* * *

The American Rubber Co. of East Cambridge has had an excellent sale for its clothing this season, and the outlook is for a continuance of this state of affairs. The lines for next season contain some few novelties in fabrics and patterns, but little change being noted in the styles of their garments, which seem to hit the popular taste exactly. The factory is running to full ticket, principally on orders.

The Boston Belting Co. has taken on two new agencies in the South. They are the Norvell-Wilder Hardware Co., Beaumont, Texas, and the Reliance Machine & Supply Co., New Orleans, Louisiana. Both these houses will carry the specialties of the Boston Belting Co. in stock, a convenience which will be appreciated by users of these goods in these sections.

THE RUBBER TRADE IN AKRON.

(By a Resident Correspondent.)

THE GOODYEAR TIRE AND RUBBER CO. held their annual meeting in January, electing the following officers: President, F. A. Seiberling; vice-president, C. W. Seiberling; secretary, G. M. Stadelman; treasurer, F. H. Adams; assistant treasurer, W. E. Palmer; factory manager, P. W. Litchfield. The directors are as follows: F. A. Seiberling, C. W. Seiberling, F. M. Stadelman, F. H. Adams, P. W. Litchfield, J. P. Loomis, H. B. Manton.

The common stock of this company has increased over $100 per share in the last two months and there are some sales as high as 307. They are paying 12 per cent. dividend on new stock.

Since December 1, 1911, the Goodyear company has opened the following branches with the following persons in charge:

		In charge of
Albany, N. Y.....		W. B. Moseley
Birmingham, Ala...	424 S. 20th St.....	J. G. Caldwell
Charlotte, N. C....	225 N. Tryon St.....	
Des Moines, Ia....	511 7th St.....	F. C. Moyer
Denver, Colo.....	1562 Broadway.....	S. E. Gillard
Omaha, Neb.....	2212 Farnam St.....	T. V. Graves
Portland, Me.....	47 South St.....	I. W. Penniman
Rochester, N. Y...	Court & Courtland St.	C. L. Stackhouse
St. Paul, Minn.....		
Salt L'ke City, Ut'h.	123 E. 2d South St....	J. C. Riley
Syracuse, N. Y....	413 S. Warren St.....	H. H. Munday
Worcester, Mass...	671 Main St.....	F. J. Redemann
Waco, Tex.....	614 Austin St.....	J. H. Carlson
London, Ontario...		

The yearly statement of the Goodyear Tire and Rubber Co. shows total assets of $6,953,768, outstanding capital stock, $3,284,100 and surplus $1,119,752.

* * *

The officers of the B. F. Goodrich Co. for the ensuing year are as follows: Bertram G. Work, president; Frank H. Mason, vice-president; H. E. Raymond, second vice-president; Chas. B. Raymond, secretary and assistant treasurer; William A. Means, treasurer and assistant secretary.

The directors are: B. G. Work, F. H. Mason, H. E. Raymond, C. B. Raymond, W. A. Means and C. C. Goodrich. W. A. Means succeeds Geo. W. Crouse lately deceased.

The B. F. Goodrich Co., at their annual stockholders' meeting held January 17, 1912, in addition to the regular dividend of 12

per cent., declared a 20 per cent. extra dividend payable in preferred stock, and the extra goes to common stockholders of record as of January 6. This preferred will be dated January 17, from which time it will begin to accumulate dividends. Since a large amount of work is required in getting ready $2,000,000 of stock, it may be two or three weeks before this preferred is ready for the stockholders. Parties holding broken lots of Goodrich common so that their dividend will not amount to a full share will receive a scrip certificate covering the fraction to which they are entitled. This scrip will only receive dividends when combined with others to make a full share. The company is not selling any of its preferred at present. The 20 per cent. dividend declared is all that is being issued at this time. Stock brokers figure that Goodrich common will hold at 250, first, because the price had advanced very little, as people did not believe the extra dividend would be declared; second, directors intimated that similar stock dividends may be declared out of the surplus earnings from time to time; third, 1911 was the most prosperous year in the company's history and 1912 prospects are as good if not better than those of 1911.

The B. F. Goodrich Company are actively pushing their work in the new plant at Colombes, France. Bertram G. Work, president of the company, has just returned from a trip to France in connection with the future of the Colombes plant. Irvin Renner, one of the department foremen of this company, together with several experts in rubber tires, are at present at Colombes placing matters in shape so that the Goodrich Company may be able to use their Colombes plant at an early date.

* * *

The Electric Reclaiming Co., capitalized at $200,000, has purchased the buildings of the Carrara Paint Co. at Barberton and expects to reclaim rubber.

* * *

The Miller Rubber Co.. has increased its capital stock from $500,000 to $1,000,000. The company expects to make changes this year so that it can greatly increase its tire output. The officers are as follows: President, Jacob Pfeiffer; vice-president, C. T. Grant; secretary and general manager, Wm. Pfeiffer; treasurer, F. B. Theiss.

This company's stock has advanced, selling at 141 this last week. This stock is figured on a 10 per cent. basis. Of the increased amount of Miller Rubber Co. stock, $200,000 is offered to the stockholders at par, which is rapidly being taken up by the stockholders.

* * *

The O'Neil Tire Protector Co. has decided to open a branch office in Chicago. This company produces a bullet-proof protector.

* * *

The Diamond Rubber Co. reports the season of 1911 the best in its history with the largest output and the prospects of 1912 are even better. The company is in a better position to supply its trade and new service stations have been opened at Scranton, Pennsylvania; Worcester, Massachusetts; New Haven, Connecticut; and St. Paul, Minnesota.

O. J. Woodard, an old employe of this company, who has had charge of the solid tire department, has resigned to become general sales manager of the Woods Motor Car Co., of Chicago. On January 19, his associates at the Diamond Co. gave him an informal lunch and a diamond stickpin.

The inclement weather for the last six weeks has made the boot and shoe department very active.

* * *

Mr. Harry Quine, editor of the Akron "Times-Democrat," has resigned his position on that paper to become publicity agent of the Goodyear Tire and Rubber Company. Mr. Quine is a man of experience in newspaper, magazine and publicity work, and the Goodyear Company can compliment itself on securing the services of this capable man.

* * *

Glenn H. Curtiss, who is at Los Angeles, California, is making experiments with a hydroplane with which, when improved, he expects to cross the Atlantic. He is using Akron Fabric and it is stated that he places his motor in the pontoons connected with his aeroplane.

* * *

Harry N. Atwood, the celebrated aviator who made the initial long distance flight, from St. Louis to the Atlantic coast, has been in Akron looking up material for a new aeroplane. It is reported that he has an improved machine about to be patented. It is claimed that Mr. Atwood is preparing an aeroplane with which to cross the Atlantic and that the Goodyear Tire and Rubber Co. has agreed to make special pontoons which Atwood expects to test out on his exhibition flights along the coast, so that they can be used in trans-Atlantic flights. Mr. Atwood says, "I positively do not intend to quit flying. I am going to keep on flying as long as I live. I like the sport and can make more money at it than at anything else. I have contracts that will keep me busy until summer and I expect to make the trans-Atlantic trip." Mr. Atwood says that each pontoon will be of rubber and have 30 cubic feet capacity. Two pontoons will support 3,600 pounds on the water and his machine weighs only 1,100 pounds.

Mr. Atwood gave a lecture to the Technical Club of the Goodyear Tire and Rubber Co. in which he gave many incidents from his own experience in the air.

* * *

He also stated that the fact that aeronauts were able to make their machines remain perfectly still in the air was brought about as follows: No aeroplane can keep in the air unless it is moving at the rate of 30 miles an hour at least, or when driven by a wind at the rate of 30 miles an hour or over. When an aeroplane is along a hillside and air currents are coming up the hillside at 30 miles an hour or more, the aeroplane will keep the same relative position and consequently appears to be perfectly still.

Mr. Atwood uses a Wright machine and Goodyear fabric.

* * *

Professor Lawrence Rotch, of Harvard, Director of the Blue Hill Meteorological Observatory, is quoted as saying that he believes it feasible to cross the Atlantic in a dirigible balloon. He doubts if the aeroplane is sufficiently perfected to make the trip. He says, "The Atlantic Ocean can be crossed in a dirigible balloon in one to two days less than by the fastest steamboat. This balloon must be capable of maintaining a speed of 25 miles an hour at an altitude of one-half mile. The trip can be made in either direction, either from Boston to London or from the latter city to the Hub. I have compiled maps showing that this is correct."

THE RUBBER TRADE IN RHODE ISLAND.

(By a Resident Correspondent.)

THE months of December and January were a period of uncertainty for the rubber business in this section of the country, several mills curtailing, one going into the hands of a receiver and another closing down for a week for an early stock taking, because of the dullness of trade. The stormy weather in the early part of January, however, with other causes, brought a return of business, and for a time plants ran briskly.

During the first week in January the National India Rubber Company's plant at Bristol closed for stock taking, thereby throwing the force, numbering about 1,400 persons, temporarily out of work. On Monday, January 8, several hundred went back to work in the calender, cutting and other departments, and more departments were opened the next day. The entire force

was back on the 10th of the month with, however, a slight decrease in the shoe and gaiter tickets.

* * *

The prevailing dullness of the trade caused the Alice Mill, in Woonsocket, and the Millville Mill, in Millville, Massachusetts, both controlled by the Woonsocket Rubber Co., to go on a five-day-a-week schedule the week of January 8. The change affected 1,400 hands in the former and 600 in the latter. Officials of the Woonsocket concern announced at the beginning of the curtailment that they believed the period of the same would be of short duration. The curtailment continued until January 19, when both mills closed temporarily, the date for reopening being set for February 12.

* * *

The Consumers' Rubber Co., Bristol, which employs 350 persons, is now in the hands of a permanent receiver as a result of court proceedings which Terence McCarty, manager and principal stockholder in the concern, started December 27, last, as a result of lack of ready funds with which to carry on the business.

Mr. McCarty petitioned the Superior Court in Providence for the appointment of the receiver, fearing attachments which would ruin the business. This was followed by the placing of an attachment on Mr. McCarty's real estate, located in Bristol, by Tobias Burke, of Providence, a creditor of the company. The amount named in the writ was $7,500. The following day Presiding Justice Tanner ordered the company to close its plant, pending a hearing on January 3. At that hearing George H. Kelley, of Providence, who had been acting as temporary receiver under a bond fixed at $20,000, was replaced by Robert S. Emerson, of Pawtucket, as permanent receiver. Lawyers representing creditors in Boston and New York as well as Providence consented to this arrangement.

The plant was closed for several days while Mr. Emerson was taking account of stock and preparing a report upon which plans for conducting or closing the business could be based. On January 8 he secured permission from the court to open the plant for the purpose of finishing the stock on hand. This took three days.

The report filed by Mr. Emerson on January 10 showed the following assets: Real estate, as carried on the books of the company, $50,000; machinery, $65,000; inventory of merchandise, as taken by the receiver, $71,709.67; crude rubber, as pledged to and in the possession of the American Electrical Works, $12,862; crude rubber, held by the Blackstone Canal Bank under an agreement, $34,000; an equity in book account, assigned to the Mercantile Advance Company, $14,843.18; 25,000 yards of duck at the Enterprise Dye Works, Woonsocket, $4,687.50; accounts receivable, $1,115.29; accounts payable, showing a debit balance, $82.34; cash on hand, $112.59.

Under the head of liabilities the receiver included a mortgage on real estate for $19,000; promissory notes, for which some form of security was held by payee, $60,000; notes payable for merchandise, $103,089.50; unsecured notes payable for cash loan, $69,336.58; accounts payable, $106,689.72; accounts receivable, showing credit balances, $63.60. Total, $358,679.40. As he placed the total assets at $254,412.57, there was left a deficit of $104,266.83. While preparing the report Mr. Emerson sold $2,500 worth of merchandise for cash and shipped $5,000 worth more.

This report was so satisfactory to the creditors and Court that Mr. Emerson was given authority to reopen the plant. He did so on January 15. For a start, 50 cases of gum shoes and 100 cases of tennis shoes were turned out daily. The output is to be increased gradually as business develops.

* * *

It is estimated that 15,000 persons attended the opening night of the first automobile show of the Rhode Island Licensed Automobile Dealers' Association at the State Armory, Providence, January 22. The show continued until January 27. The armory has a floor space as great as Madison Square Garden, New York.

The decorative scheme was the most elaborate ever seen in this city. Nine thousand square yards of blue cloth studded with incandescent lights were suspended on the steel girders 90 ft. high, and 1,900 lineal feet of lattice work with several carloads of smilax were used. The display included 51 makes of pleasure cars, 12 of commercial trucks and a host of accessory dealers and tire manufacturers. Various kinds of anti-skid tires attracted crowds while demonstrators explained their features.

* * *

Colonel Samuel P. Colt ended a two-year fight with Cyrus P. Brown, president, and several directors of the Industrial Trust Company, Rhode Island's leading banking institution, at the annual meeting of the organization, held January 16, by ousting him and electing his own candidate for the position, H. Martin Brown. He also defeated all his opponents who were seeking re-election to the Board of Directors, and succeeded in having himself made a member of the executive committee along with several friends.

At a meeting the following day, H. Martin Brown was chosen president and Colonel Colt, Charles C. Harrington, James M. Scott, Eben N. Littlefield, Ezra Dixon and Samuel M. Nicholson were made members of the Executive Committee.

This ends a struggle which began when Colonel Colt resigned the presidency in 1908 during a protracted illness. He is now in undisputed control of the banking institution which he founded nearly a quarter of a century ago. It has several branches in various parts of Rhode Island and controls a large capital.

* * *

Colonel Samuel P. Colt is one of the principal contributors to a one million dollar endowment fund which is being raised in this city by Brown University. He boosted the total by $25,000 on the morning of January 23.

* * *

The American Wringer Company at Woonsocket has purchased 110,000 square feet of land in the center of that city, known as Clinton Oval, for the purpose of providing storage space and room for an addition to the plant at a future date. It is understood that the officials of the concern are in favor of centralizing the business at Woonsocket, and that they intend to close their plant at Auburn, New York, within a year or two.

* * *

Considerable interest was aroused among officials and employes of rubber plants in Rhode Island recently by the announcement that the United States Rubber Company had in contemplation a system of profit-sharing similar to that in operation among the employes of the United States Steel Corporation. Several years ago the United States Rubber Company drew up a plan allowing employes subscription rights to the common and preferred stocks. It is expected that the new profit-sharing plan will be approved and made public at the directors' meeting in February.

* * *

A basketball team made up of employes of the Consumers' Rubber Company is providing the inhabitants of Bristol, Rhode Island, with lively entertainment these days.

* * *

It was announced at the plant of the National India Rubber Co., Bristol, Rhode Island, January 24, that the druggists' sundries, hose and mechanical fabric departments of the plant are to be closed and moved to Cleveland, Ohio. About 600 employes are effected.

The plant at Bristol is to be used in the future exclusively for the manufacture of rubber shoes and insulated wire.

Information as to the change came as a surprise to the employes of the company. The work on hand will be run out and

it is expected that the departments will be closed by the last of March. The lines which are to be discontinued have been manufactured by the Bristol company, which is a subsidiary of the United States Rubber Company, for 40 years.

* * *

Colonel Samuel P. Colt was a guest at the wedding of his niece, Miss Elizabeth Linda Colt, daughter of United States District Judge Le Baron Colt, and Mrs. Colt, on the afternoon of January 17, to Andrew Weeks Anthony of Boston.

THE RUBBER TRADE IN TRENTON.

(By a Resident Correspondent.)

THE L. M. ANDERSON CO., which was incorporated in this State this month with a capital stock of $60,000, with shares at $100 each, has acquired the old Titus Woolen Mills' property for the purpose of manufacturing raincoats and other rubber garments for men and women. The corporation is installing machinery, and the work of making garments is to be started next week. The company expects to give employment to half a hundred persons at the start, and later it is the intention to increase the working force to one hundred or more. Sample garments are now being manufactured in New York City. The promoters of the enterprise are well-known Trenton business men, including W. O. Anderson, treasurer of the New Jersey Pulp Plaster Co.; Arthur J. Anderson, of the same concern, and former treasurer of the Essex Rubber Co.; A. W. Lee, E. O. Machlin, formerly with the Ajax-Grieb Rubber Co., Trenton, and Howard A. Lee. The latter and W. O. Anderson are to be the active heads of the concern. Arthur S. Schragger, for many years connected with the Kenyon Raincoat Co., of Brooklyn, is to be the superintendent of the plant.

* * *

J. B. McKay, Chicago and western representative of the Empire Rubber Co. and the Empire Tire Co., visited the Trenton factory the past month for the purpose of getting in closer touch with affairs of the companies. Mr. McKay was not idle during the two weeks he was in this town, but put in from eight to ten hours a day at the plant.

* * *

The exhibit of the Empire Tire Co. at the auto shows in the Garden and Central Palace, New York, the past month, resulted in the booking of many orders for this excellent tire. Boyd Cornell, secretary of the company, was responsible for the big exhibit at both shows.

* * *

General C. Edward Murray was last week re-elected president of the Empire Rubber Co. and the Empire Tire Co. Boyd Cornell was re-elected secretary of the above-named concerns.

In addition to his large interests in the Empire concerns, General Murray is the controlling factor in the Crescent Belting and Packing Co. and the Crescent Insulated Wire Co.

* * *

The Endurance Tire and Rubber Co., of New Brunswick, has filed a certificate with the Secretary of State, changing the par value of its capital stock from $100 to $25. As there are 1,000 shares of the stock, this will result in a reduction of the authorized capital from $100,000 to $25,000. The corporation was chartered in 1910 to manufacture all kinds of rubber goods. The consent to the change was signed by all stockholders.

* * *

R. T. Elwell, of this city, president of the Elwell Rubber and Insurance Co., of Claremont, N. H., manufacturers of rubber specialties, has given the letter carriers of the Trenton Postal district rubber heels for their shoes.

Mr. Elwell hopes to secure the endorsement of the hundred or more carriers of this city with a view of having the Government adopt the rubber heels as a part of the uniform equipment of the letter carriers.

* * *

The officers of the Thermoid Rubber Co., New York, were re-elected at a meeting of the directors recently in this city. The officers are: Joseph Oliver Stokes, president; Fred S. Wilson, vice-president; W. J. B. Stokes, treasurer; Robert J. Stokes, secretary.

Vice-President Wilson attends to the western end of the company's business, which materially increased the past year. The concern's output of automobile tires finds favor with autoists everywhere.

* * *

Watson H. Linburg, president of the United and Globe Rubber Company, was re-elected to the board of directors of the First National Bank, the Inter-State Fair Association and the Lotus Club recently. Mr. Linburg announces the engagement of his daughter, Emma, to Horace B. Tobin, of this city.

* * *

The new $200,000 home of the Wilbur Young Men's Christian Association, founded by the late Edward Grant Cook and his brother, George R. Cook, of the Hamilton Rubber Manufacturing Co., was opened to the public last month.

* * *

John H. Broughton, vice-president of the United and Globe Rubber Manufacturing Co., is on the directorate of two banks—the Mercer Trust and Trenton Trust and Safe Deposit Co.—the School of Industrial Art, the Inter-State Fair Association, Mercer Hospital, the Lotus Club, the Trenton Country Club and various other organizations and corporations.

THE RUBBER TRADE IN CHICAGO.

(By a Resident Correspondent.)

REPORTS of conditions in the rubber industry received in Chicago from the west were never brighter. From all of the Chicago concerns and agencies comes the declaration that January was one of the best months for the trade, largely on account of the weather. With the Milwaukee automobile show over and preparations going on for the Chicago show, tire men have been extremely busy attending the one and looking forward to the other, as well as taking flying trips to New York to get a line on what 1912 is going to bring forth in the way of tires and inner tubes. Salesmen traveling out of Chicago and making the principal cities between here and the Pacific coast report business as remarkable.

On top of all this, Chicago will be placed on the map in the near future as a tire manufacturing city. George B. Dryden, president of the Dryden Hoof Pad Co., is going to build a new factory this spring and enter the tire game. The company, which at present has its plant located at West Twelfth street and Forty-sixth avenue, has acquired property on the southeast corner of the intersection of Forty-third avenue and the tracks of the Baltimore & Ohio Chicago Terminal Railroad, on which a building will be erected shortly. Work will be begun about April 1. The tract of land contains 59,000 square feet, and is situated in the heart of the large West Side manufacturing district. Besides their patent hoof pad and rubber shoes, the company will manufacture both pneumatic and solid rubber tires.

* * *

As yet no one has been appointed by the Republic Rubber Co. to take the place of J. H. Kelly, formerly Chicago manager, who was recently made manager of tire sales by President Thomas L. Robinson. Mr. Kelly is now located at the general offices of the company in Youngstown, Ohio, in an advisory capacity, during the absence through illness of Mr. Lomasney, vice-president and general sales manager. Mr. Kelly will also be associated with F. P. Best, former New England manager for the company, who

was made manager of mechanical sales on January 2. Mr. Best will also be located at the general offices. H. W. Bixler continues in the capacity of assistant general sales manager.

* * *

C. C. Murray, who left the Duck Brand Co. six years ago to enter business for himself at Rockport, Indiana, was welcomed back as a member of the selling force of his old company last month. T. O. Vance, formerly with the Beacon Falls Rubber Shoe Company, 307 West Monroe street, has also accepted a position as salesman for the Duck Brand Company. Mr. Vance was succeeded by A. L. Shimp.

* * *

The Stearns Rubber Co. is busy moving into the new quarters on the first floor on the southeast corner of West Jackson boulevard and Market street. The new office will be one of the most spacious and best appointed in the rubber industry in Chicago. With an artistic lighting system and equipped with new office furniture, the office has four entrances, one on the corner, one on each street, and a fourth through the main corridor of the building. Large plate-glass windows extending from the high ceiling almost to the floor form the two street sides of the room and assure more than ample light during the day, which is a rare feature in the downtown district of Chicago, where electricity is necessary both day and night in a majority of the offices.

* * *

With the approach of the automobile show, tire talk is the burden of discussion among those interested in this branch of the rubber trade. E. B. McKay, Chicago manager for the Empire Rubber Manufacturing Co., 1305 Michigan avenue, was one of the enthusiastic forecasters of the greatest year in tire history.

"As at the New York show we will exhibit our new type of round tread, straight side and clincher tires," he said. "We shall also make a special showing of our Peerless red inner tubes, which are the highest priced and of the highest grade on the market today. The rubber department of the coming automobile show will surpass any similar exhibits heretofore shown in the Middle West, and for Chicago this year we predict a season in the tire industry that will eclipse even the fondest speculations of the manufacturers."

George M. Munsa, who covers the entire territory west of the Mississippi river for the Empire company, has started on his thirty-day trip to the coast during which he will take in every city of any considerable size. In his reports so far he characterizes trade conditions in the West as excellent.

* * *

"At the coming show we shall exhibit our tires that have made the best showing on all cross-country runs," said S. H. Tierce, manager of the Chicago branch of the Ajax-Grieb Rubber Co. "We shall have booths Nos. 26 and 27 in the gallery at the Coliseum, where the rubber goods will be displayed. There the customers will be given a chance to size up the worth of our 5,000-mile guarantee which is predicted on so many pounds pressure for each certain size of tire. If motor car owners would look more closely into the matter of air pressure they would get more mileage from their tires.

General Manager J. C. Matlack of the Ajax-Grieb company will be one of the visitors at the show.

The Motz Tire and Rubber Co. is boosting the Motz non-skid tire, which has recently received such a large number of indorsements from users of light trucks and vehicles built for speed as well as service. The Motz people report a 500 per cent. increase in the sales of their cushion tires during the last year, and this will be the main feature of their exhibit. The Anderson Electric Car Co., of New York, in a letter praising the Motz tire, said that the Harlem ambulance thus equipped was able to skim along the boulevards and streets of the eastern city during heavy falls of snow, while other cars were slipping and sliding about in an almost helpless condition.

Directors of the Chicago Motor Club have announced that they will keep "open house" for all automobile and tire men during the national automobile show at the Coliseum, January 27 to February 10. Guest cards will be issued to manufacturers and dealers in attendance at the show, affording the recipients full privileges of members of the Motor Club.

THE RUBBER TRADE IN SAN FRANCISCO.

(By a Resident Correspondent.)

CONDITIONS are shaping up well for a bright outlook commercially. The new mayor, James Rolph, has taken office together with a new Board of Supervisors, and in these new officials the people have the greatest confidence. It has been a long time since San Francisco has pulled together as a unit, but now it appears that such a thing is most likely, especially with the Panama-Pacific Exposition coming on, and if this is the case there will be greater development in the city within the next four years than ever occurred during a like period. In the meantime the country districts are quietly but very rapidly increasing in population, and farming is getting more concentrated and productive all the time. Business men believe that an era of marked prosperity is in store for the Pacific coast.

* * *

The Republic Rubber Co. has incorporated its business for the purpose of better handling it on the Pacific coast. It is incorporated as the Republic Rubber Co. of California, with its principal place of business in San Francisco; being registered with a capitalization of $20,000, the shares being $100 each, of which full amount has been subscribed. The incorporators are: M. E. Murray, T. W. Swift and Neal Power.

* * *

Austin Kanzee is no longer connected with the Republic Rubber Co. He now has the agency for the Kelly Springfield tires, which he is busy selling on the coast.

* * *

The United States Tire Co. has opened its fine new store on Van Ness avenue, and the splendid edifice is without doubt one of the finest of its kind devoted exclusively to the tire business. The building extends from Turk street to Elm avenue, along Van Ness, and is two stories high. The Van Ness frontage is of classic Greek design, with four large Ionic columns. The lower floor of this section of the building is to be devoted to the use of the San Francisco branch salesroom and offices. On the second floor are the general offices of the western district, the division of the U. S. Tire Company which controls and supervises all branches and agencies from Denver west. The tires distributed are the Hartford, the Morgan & Wright, the Continental, the G. & J. and the United States tire brands, including the Nobby Treads. This jurisdiction also extends over the western part of Canada, Mexico, South America, the Hawaiian Islands, Australia, the Philippines and the Orient as far as India. J. C. Weston, the Western District manager, is visiting the factories in the eastern States.

* * *

The Gorham-Revere Rubber Co. made a number of changes in its employes in the San Francisco store. The firm is getting thoroughly organized for a big campaign during the coming year.

* * *

The difficulty which the city of Seattle, Washington, has been experiencing in the matter of securing 20,000 feet of fire hose, has at last been settled. The city has awarded the contract to a local concern in Seattle. The contract calls for 20,000 feet of 2½-inch hose made to very particular specifications. These specifications, gotten up specially for the city of Seattle to experiment on, had to be amended four times before any of the responsible rubber companies were willing to even undertake

the manufacture. The Board finally secured several bids on the much-amended specifications. Even now serious doubts are entertained by high-grade manufacturers as to the dependable service that can be secured from a hose purchased at 66 cents (the price made by the successful bidder) for the size and extent of a fire department like that of the city of Seattle, when such a possible immense risk by fire is taken into consideration.

* * *

The Gorham-Revere Rubber Co. gave a very successful, enjoyable and instructive entertainment and banquet last week to its traveling salesmen who cover the California territory. The banquet was held at the Bohemian Club, and each one present was presented with a handsome scarf pin as a memento of the occasion. The speeches made to the salesmen were instructive, and the entire affair was so successful that similar meetings will undoubtedly hereafter become annual affairs. Some 28 men attended the banquet.

* * *

J. B. Brady, of the Gorham-Revere Rubber Co., is now in the east on a business trip for the firm.

* * *

The American Rubber Manufacturing Co. is putting the finishing touches on its new factory building at the works across the bay at Emeryville.

* * *

Arthur Ralph, who had charge of the branch retail tire store of The B. F. Goodrich Co. on Van Ness avenue, is no longer connected with that firm. Mr. Miller, in charge of the mechanical department of the B. F. Goodrich Co., has returned from his recent visit to the factory.

* * *

The Pacific States Rubber Co. has recently been incorporated with its principal place of business at Portland, Oregon.

* * *

Mr. Louis Thompson, formerly a traveling jewelry salesman, has taken a position as traveling representative for the Western Tire Co.

* * *

The Pneumatic Clutch Co. of Oakland, California, has increased its capital stock to $500,000.

* * *

George E. Starr and H. A. Forbes, for themselves and backed by certain eastern capital, have purchased from H. R. Keaton, of this city, his patent non-skid tire. Mr. Starr has left for the east where he will make arrangements with the Swinehart Tire Company for manufacturing tires with this tread.

LIVERPOOL RUBBER FLUCTUATIONS 1911.

WHILE the fluctuations of rubber in the Liverpool market during 1911 were less marked than in 1910, they were in the earlier part of the year relatively varied in character. According to the annual report of Messrs. William Wright & Co., following a decline, the price of fine Pará recovered by the end of January to 5*s.* 8*d.* During February, a further advance took place to 7*s.* 1*d.* The next ensuing months witnessed in general a fall; prices ranging as follows: March, 7*s.* to 6*s.* 3*d.*; April, 6*s.* 2*d.* to 4*s.* 9*d.*; May 5*s.* 4*d.* to 3*s.* 10½*d.* June was steady without much change. July ranged from 4*s.* 0½*d.* to 4*s.* 9*d.*; reaching in August 4*s.* 11½*d.*; and in September, 5*s.* In October a reaction took place to 4*s.* 3*d.*; November closed at 4*s.* 5*d.*; and December at 4*s.* 3½*d.* The existence of the speculative stock held in Brazil is a factor constantly being taken into consideration in Europe. While some reports indicate a willingness on the part of the financial interests affected, to support the market by purchases of new crop rubber, opinions have been expressed that the sooner the stock in question is cleared off the better for both holders and consumers.

GERMAN RUBBER GOODS INDUSTRY IN 1911.

WHILE German industries in general enjoyed relative prosperity, and the requirements in technical and mechanical rubber goods were proportionately extensive, manufacturers of the latter products found prices affected by the existing keen competition for business, which led to orders being considerably split up. The strikes and lock-outs in several important branches served to restrict purchases of rubber goods.

Some branches of the German rubber goods industry materially profited by the exceptionally high summer temperature, while others suffered from the same cause. Among those benefited were the hose manufacturers, as well as the producers of articles connected with outdoor sports and motoring. Prominent in the latter category was the pneumatic tire industry, which was debarred from profiting through the favorable weather conditions, by the efforts of foreign manufacturers to obtain at any cost the control of the German tire trade. This situation was all the more difficult for German manufacturers, in view of their having large stocks on hand of high-priced rubber.

Rubber clothing was depressed by the weather, while stocks of rubber shoes have in many cases been carried over by dealers. Business in elastic webbing was quiet, which situation reacted upon rubber thread.

Owing to the unprecedented dryness of the summer, German hose manufacturers had a record year. Customers were clamoring for goods. Business continued relatively active to the end of the year, and manufacturers are hoping for good times in 1912.

Business in articles for aviation was quiet throughout 1911, the numerous accidents having diminished the interest shown by the public. The opinion has been expressed that some time will elapse before aerial traffic will become an accomplished fact. Its immediate future seems to lie chiefly in a military direction.

AN ENGLISH TIRE VAN.

We recently illustrated a tire van used by one of the large English companies in a very effective form of advertising. The originators of the tire van are said to be The Palmer Tyre, Limited, of London. This company has had such a van on the streets

A PALMER TYRE, LTD., VAN.

of London for several years, and in addition is using one now in France and one in Italy. The accompanying cut shows its latest vehicle of this sort. It is effective advertising, and just as convenient for use as any other motor car.

The India-Rubber Trade in Great Britain.

By Our Regular Correspondent.

UNSATISFACTORY and in many cases disastrous reports issued by plantation and other rubber companies floated in the boom-time of 1910, have become so common of late as hardly to attract notice, except among those financially concerned. That this state of affairs should be reflected in the case of many old-established rubber manufacturing concerns where reports were issued in December has caused surprise to many people who do not appear in the respective companies' lists of shareholders. This set-back in profits has affected not only small works but concerns like those of the Dunlop Rubber Company, Limited, and India-Rubber, Gutta-Percha and Telegraph Works, Limited, of Silvertown, the shares in which are widely held. The main cause in the decline of profit is probably much the same all round, i. e., the purchase of raw rubber in advance at high prices, and the subsequent inability to get a corresponding increase of price for the finished goods. Many manufacturers have been hit by contracts under which the delivery of same extended over twelve months. Labor troubles have also in many cases proved a source of loss, strikes having occurred not only in the rubber works, but among railway and carting employes, causing dislocation of trade.

TRADING RESULTS.

At the various company meetings where losses have had to be explained, the respective chairmen have sought to console their audiences by laying stress on the losses incurred by the other companies, and by hinting that all may not be too well with those private companies whose accounts are not made public property. The announcement by the Dunlop Rubber Company's chairman of an impending new issue of shares to finance an entirely new department was not too well received, the market value of the shares having experienced a further small decline.

THE somewhat belated Board of Trade enquiry into the explosion of a devulcanizer at the North-Western Rubber Company's works at Liverpool on October 4, 1910, was held early in December last at the Chancery Court, Liverpool. One man was killed by the explosion. In the course of the enquiry the commissioners visited the works and had the process explained to them. A good deal of evidence was given in court but it would take up two much space to comment on that at length. The commissioners found that the explosion was due to hydrostatic pressure on account of the devulcanizer having been filled too full with the caustic soda solution. Moreover they found that Dr. Torrey and his subordinates had no idea that dangerous hydrostatic force could be expected in a boiler of that kind. They were therefore not to blame for the accident and none of them would be called upon to pay any part of the costs of the inquiry. At the same time it was said that the devulcanizers at the works should be kept under better supervision by the engineer in charge and not left so much to subordinates. The first six devulcanizers were made in America and the last two in England from the American drawings, it being one of the latter that exploded. Questioned on the subject of a safety valve Dr. Torrey expressed himself as against its use, it being a source of danger rather than of safety, though the commissioners said that in their opinion some safety appliance was imperative and such safety appliance must be automatic.

EXPLOSION OF A DEVULCANIZER.

It is satisfactory that the cause of the explosion seems to have been definitely ascertained, because it will bring home to rubber manufacturers a source of peril of which they had hitherto been ignorant. I am not enough of an engineer to say whether there is real justification for any such ignorance on the part of engineers of experience. The devulcanizer was regularly inspected by the Vulcan Boiler Insurance Company, Limited, but it did not come out in evidence that they issued any warning as to the danger of overfilling. Perhaps, however, any such advice might have been resented as going beyond the limits of inspection. It now remains for those rubber works which utilize the process of vulcanizing in hot water to give careful instructions that the pan must not be filled beyond a certain point. The insurance company I may say was not a party to the inquiry, but offered to give evidence through its engineers. With regard to the safety-valve question I may refer to the matter again when the Board of Trade report is issued, these reports not always corresponding exactly with the judgment given in court. I understand that a sort of arrangement was reached in court that Dr. Torrey and a Board of Trade engineer should put their heads together to see what is feasible in the way of a safety-valve.

MESSRS. SIEMENS BROS. & CO., LIMITED, have built new works adjoining their cable factory at Woolwich, this being necessitated by reason of the development of their rubber insulated wire business in recent years. The capacity of the new works is 8,000 miles of insulated wire and cable per annum, in addition to tapes and ebonite. The total floor space covers three acres, the windows occupying 40 per cent. of the space of the side walls. The six new washing machines are driven by a 95 h. p. motor, this being one of the first firms to adopt electrical driving for rubber machinery—which occurred a good many years ago.

ENLARGEMENT OF WORKS.

SAMPLES are being shown of solid tires said to be made entirely of reclaimed rubber and it is predicted that a great development in the use of rubber tires on steam motor wagons is imminent. Under a national regulation which applies to the whole country the speed of steam motor wagons in towns is limited to 5 miles an hour with steel tires, and 12 miles an hour with resilient tires. I understand that a tire made of reclaimed rubber has recently stood the ordinary commercial guarantee of a 10,000-mile run with quite satisfactory results. The saving in first cost is put at 75 per cent. of the cost of new rubber tires, thus bringing the price low enough to cause rubber tires to be largely used in the extensive steam transport business now observable in our manufacturing centers.

RECLAIMED IN TIRES.

I SEE that a patent for desulphurizing and devulcanizing rubber has been granted to W. W. Wildman and James Christy, Akron, Ohio, the processes involved being the time-honored ones of acid and alkali treatment, the novelty presumably being in the use of each treatment one after the other on the same lot of vulcanized rubber. I notice that the majority of patentees use the expression "devulcanization" freely, though I have never yet come across any of these reclaimed rubbers which really were devulcanized. True, they have been desulphurized as far as the removal of their free sulphur is concerned, but this is not devulcanization. Certainly the present patentees do not go as far as some have done and claim that the rubber which has undergone their process is equal to new rubber, and can be used for the same purposes. They do, however, state categorically that it is devulcanized, a term which evidently has more than one signification. It is very generally the case that reclaimed rubbers contain more combined rubber than they did prior to the reclaiming process, though their free sulphur content may be practically nil. The present patentees treat the finely divided rubber with a hot 6 per cent. solution of hydrochloric acid for one hour, wash out

DEVULCANIZING PATENT.

the free acid and treat under pressure with a 3 per cent. solution of sal-soda (presumably the carbonate) or caustic soda, which they say facilitates the ultimate result very materially. The temperature of treatment is 310 to 335 degs. F. and the time three to five hours.

The acid treatment *inter alia* rots the canvas and the alkali finally removes it. Except that the time is much shorter, there does not seem any particular difference in the latter part of the process from Marks' patent, as worked by the North Western Company, Limited, at Liverpool, nor in principle from Price's patent, worked by the Rubber Regenerating Company, Limited, at Manchester. On the face of it, it would seem by the granting of this new patent that any one can use the alkali process as long as he follows it or precedes it by some other process of more or less utility. This is an interesting supposition, and one that is not without importance to large commercial interests. The resultant rubber by the new process should have a high rubber content, as the acid will remove much of the fillers and the alkali the resins and substitutes.

PERSONAL MENTION.

Mr. Maldwin Drummond, who a few months ago retired from the directorate of the Crude Rubber Washing Company, Limited, has been elected a member of that very exclusive club the Royal Yacht Squadron. He is a member of the Drummond family so long known in connection with banking in London, and is married to the widow of the son of Mr. Cyrus Field, whose name and achievements will, of course, be familiar to American readers. Mr. Drummond had for some years been prominently associated financially with the British Murac Company, Limited.

Mr. T. Hallas has severed his connection with the firm of T. Hallas & Co., Limited, of Cinder Hill, Todmorden, Lancashire, which he founded a few years ago for making reclaimed rubber and substitutes. He has joined the Haycliffe Rubber Company, of Great Horton, Bradford, as a partner with Mr. A. Crowther, and he intends to enlarge the works and take on the manufacture of other rubber goods than the heel pads, which are now the principal output of the company.

Messrs. W. H. Veno, T. Jackson and H. B. Rudolf have been elected additional directors of the Gorton Rubber Co., Limited. They are all well-known local commercial men, having substantial holdings in the company.

LONDON RUBBER NOTES.

(By a Special Correspondent.)

THE ARMY AND NAVY STORES.

AT all the important shopping centers in any leading town, the public should be able not only to purchase time-honored lines, but to inspect a wide range of the latest novelties in such classes of goods as these emporiums make it their business to supply.

"But think how valuable is every inch of our show-rooms and stock-rooms," I seem to hear many shopkeepers exclaiming. "Would you have us turn half our premises into a lumber-house for the thousand and one useless inventions that are patented year in, year out?"

To which I reply that no one with the ghost of an instinct for business expects or wishes the tradesman to be a philanthropist. Business is business, and admitted without reserve that it must be pursued in the purely commercial spirit, nevertheless there is no denying that there are good, bad and indifferent commercial policies under which it is carried on. The question which vitally concerns us at the moment is whether those up-to-date business houses known as "stores" are governed by a progressive policy with regard to new lines of goods, particularly those in which rubber plays a constructive part.

Every inventor naturally looks upon his latest achievement as the one thing wanted to revolutionize the world. That is precisely how he ought to feel about his work. Who is likely to believe in his invention if he himself has only a half-hearted faith in it? How can he ever hope to succeed in the always difficult task of making converts unless his enthusiasm is so keen that it tends to become infectious? Every shopkeeper is inclined to think that there are rather too many new things under the sun nowadays, to look upon the inventor as a crank, and to regard his latest patent with suspicion. This conservative attitude of traders is all the more to be regretted seeing that manufacturers as a body are very progressive. The manufacturer, as a rule, encourages the man with ideas; time after time he takes the risk of materializing such ideas on a wholesale scale; time after time he has to face the difficulties of getting the new goods on the market. If the trader had to deal directly with the inventor, there would be sound reason for his extreme wariness—it behooves the business man to be wary of all forms of genius, from madness upwards. But it is the manufacturer who has the responsibility of dealing with the inventor; the trader is only called upon to decide whether he will stock the goods made by men who are certainly his peers in matters of business. Little shopkeepers can hardly be blamed if they do not take the risk of buying new lines of goods with the enterprising idea of introducing them to the public; nor even if, considering the limited accommodation of their premises, they will not consent to take a stock of such goods on consignment. But let a shop call itself a "Stores," and unless it be a village depot where lollipops, candles and sundry articles of clothing hobnob on the same shelf, people expect it to be quite up-to-date as regards its stock. Personally, I think that not only the manufacturers, but the public might reasonably expect even more of the really first-class stores in a big city; their stock should be ahead of the times, in that it includes a good show of latest inventions, and their assistants should be well informed in the current history of industrial development in so far as it affects their particular department. In a word, "Stores" should be run on exhibition lines to a great extent.

I am at present engaged in the interesting and illuminating business of going the round of the big London stores, trying to discover by a method of my own the policy under which their rubber department is carried on. My role is that of a quite ordinary member of the intelligent public. Being interested in rubber goods, I read all the advertisements in the leading British, American and foreign periodicals that are wholly or partly devoted to the interests of the rubber industry. In imagination I put myself in the place of all manner of people: I am worked up to a fever pitch of anxiety to try this and that new tire for my motor; various new kinds of waterproof garments appeal to me as just the thing to include in my kit when next I go to the tropics, indulge in a round of winter sports, or join in a fishing expedition; as a surgeon, such and such rubber appliances seem to me decided improvements on others I am using; I feel sure I could win any golf tournament if only I used such and such a make of golf balls. Then I go the round of the stores, and ask to look at the various goods to which I have been attracted by advertisements. Can they or can they not show them to me? That is one great question, in the nature of a searching test of their efficiency and general usefulness. Again, if they have any of these goods in stock, can the assistant who is attending to me point out to me the special advantages of the new lines over their predecessors of the same class? Can he, in the case of a new invention, explain to me its advantages? And yet again, if the goods I want to see are not kept in stock, has the assistant ever heard of them? Moreover, I try to find out whether the assistant can discuss with me various current topics connected with the rubber industry. And sometimes I adopt the bold test-plan of asking to be shown the very latest thing made of rubber that has been taken into stock.

In relating my experiences gained during such expeditions, I

shall avoid, as far as possible, personal comments and criticisms. For to all whom they may concern, such experiences will, I feel sure, be of more service if they are told in such a way as to allow every one to say spontaneously when and where he will, "How agreeably surprising," or "How utterly horrifying." But in justice to the trader, I must ask my readers always to bear in mind that manufacturers must not grumble about the difficulty of getting new goods on the market unless they are indefatigable in their efforts to bring their goods under the notice of the retailers, and unless they do their share of drawing public attention to the same by advertising. And in justice to the public, who are so frequently blamed for lack of enterprise in trying new inventions, I would remark once and for all that no one can try a thing of whose existence he knows not. Most people in this world are too busy to hunt for what they want, so the things they want must hunt for them.

A few days ago, bent on the quest I have already explained, I visited the Army and Navy Stores, one of London's old-established and popular shopping centers. I went first to the rubber clothing department. Here I was told that the latest novelties were silk oilskins of a very light weight. I was shown them in all colors, and one chosen at random was weighed for me; it just turned the scales at 1¼ lbs. This was a lady's garment, but the silk oilskins for men were of about the same weight. My special attention was also drawn to waterproof hoods in the same material; these, I was assured, were highly popular with ladies for motoring, yachting, driving, etc. A feature of this waterproof material in question was that it was made *entirely without rubber*. (It is very difficult for me to refrain from making any remarks here anent the importance of rubber maintaining its hold on the waterproof market.) These stores make a specialty of ladies' wading trousers for fishing; also of waterproof boots and shoes with canvas and leather brogues. The only other novelty I was shown for ladies was an attractive line in showerproof theater-wraps, which, I was told, were equally popular for smart automobile wear. In the men's part of the department, I was shown a waterproof coat made of material put together on the "sandwich" principle. This material consisted of two layers of canvas, with rubber in between. The coat was put on the scales for me; it weighed just under 2 lbs. In this same department of the stores are kept various traveling requisites. A specialty is made of "Hold-Alls," in the "sandwich" material already referred to; these articles are provided with locks, thereby complying with one of the regulations respecting baggage that may be put into the luggage vans of Continental trains. In reply to my question as to what was the nationality of the various articles I saw around me, I was informed that most of the goods were of British manufacture. The Stores do a good deal of their own manufacturing, but they buy the various rubber fabrics from which they make their goods. The only foreign made article in the department was a Belgian novelty, a self-inflating cushion. America was represented by Boston overshoes. The assistant waxed enthusiastic over their superiority, telling me how very light they were, and remarking that English manufacturers still continue to turn out only the heavy makes, in spite of the demand for the lighter kinds. By the way, the Army and Navy Stores are virtually a private trading concern, and, as a general rule, only members are allowed to deal here. But special purchasing privileges are extended to Americans staying at the big London hotels.

Upon inquiring for the very latest novelty in the way of rubber goods, the same assistant produced a "Foot-Cosy" hot water bottle, made in the form of a tea cosy.

Next I went among the Luncheon and Tea Baskets, where I found that these widely used articles are still being made with rubber foot-rests. There were various patterns, with corrugated rubber on the top of the lid, inside the lid a groove, and on the edges of the body a round band of rubber to fit into the groove and keep the basket dustproof and airproof.

In the sports department I was shown some new rubber-cored golf balls, which can only be obtained at these stores. These balls have a wide marking, quite different from anything now on the market, and on the authority of many players, this new plan of marking gives remarkably fine results both as regards flight and putting. Other avowed novelties here were roller skates with exposed rubber cushions, and rubber coverings for tennis racquets. The assistant did not seem to think that rubber was being put to any new uses in the way of sporting requisites. He pointed out that the material was not being used so much now as in the past for cricketing gloves.

The automobile department could show me no improvements in which rubber played a part. On the contrary, here my attention was drawn to a fine new car in which steps and footboard were covered with aluminum instead of rubber, which we are accustomed to find there.

ESTIMATED DIVIDENDS OF ENGLISH RUBBER COMPANIES.

BUSINESS in rubber shares has been of late restricted on the London exchange through the prevailing uncertainty as to the prospects of the rubber market. While the dividends of most companies have, it is true, fully corresponded with expectations, the opinion has been expressed that the high profits of the plantation industry during the last few years are due to causes which today no longer exist. In consequence, many companies have, it is understood, proceeded to establish reserve funds, by which the shareholders, who anticipated high dividends, are at the moment little benefited. While it is considered improbable that the high prices of recent years will be again reached, a further reduction is regarded as hardly likely.

In view of these facts, an interesting estimate has been compiled by the London "Financial Times" of the dividends to be anticipated for 1911-12, by 24 of the leading companies, which are quoted below, as well as the dividends paid for 1910-11:

	Dividends, 1910-11.	Estimates, 1911-12.
Allagar	10	12
Anglo-Malay	100	40
Batu Caves	150	100
Batu Tiga	20	20
Bikam	8	25
Bukit Rajah	150	90
Cicely	200	125
Consolidated Malay	100	60
Damansara (Selangor)	75	42
Federated (Selangor)	140	90
Golconda Malay	55	44
Golden Hope	40	20
Highlands and Lowlands	50	22
Inch Kenneth	55	65
Kamuning (Perak)	20	27
Kepong (Malay)	40	100
Klanang Produce	87½	90
Linggi Plantations	237½	100
London Asiatic	25	30
Selangor	375	178
Straits Settlements (Bertram)	35	13
Tremelbye (Selangor)	25	36
United Serdang (Sumatra)	10	14
Vallambrosa	175	75
	2,183	1,418

The above estimates are based upon the monthly returns of production as far as published and upon a cost equalling about 36½ cents per pound, in conjunction with a selling price of about $1.09½. It will be noticed that the average dividend is estimated as showing a reduction of about one-third, as compared with the rates paid for 1910-11.

The United States imported from Russia in the year 1911, scrap rubber to the value of $638,367.

THE NORTH BRITISH RUBBER CO., LIMITED.

TO stand foremost in a great industry in a great empire is no small achievement, but that is what the North British Rubber Co., Limited, has accomplished. It is the largest rubber manufacturing concern in the British Empire. An illustration of how this great result has been accomplished may be found in the new laboratory, recently established by that company—which, by the way, is the third complete laboratory the company has built and equipped inside the last ten years.

This new laboratory, which occupies an entire building, and is

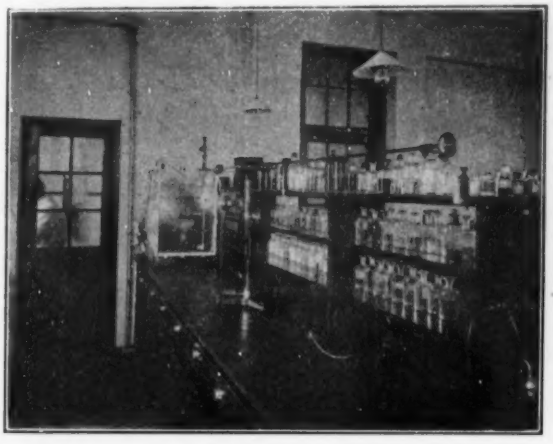
RESEARCH CHEMICAL LABORATORY.

supplied with its own power and lighting plant, includes six different departments, namely: Research Chemical Laboratory, Routine Chemical Laboratory, Physical Laboratory, Electrical Laboratory, Experimental Department, and Mechanical Laboratory.

In the Research Chemical Laboratory, a view of which is given in the accompanying cut, there is the most elaborate apparatus enabling the company to carry on a vast variety of investigations of value to the factory. Where goods are to enter into chemical uses, their utility is here thoroughly tested. Some manufacturers are content to make their goods as well as they conveniently can,

BALANCE ROOM.

send them to market and trust to luck. If no fault is found, well and good; if there are complaints the goods are taken back and new ones sent in their place. But this is not the North British system. Before any goods leave its factory, in fact before any goods whatever are made for shipment, they are subjected to every possible test, so that when they leave the factory they leave

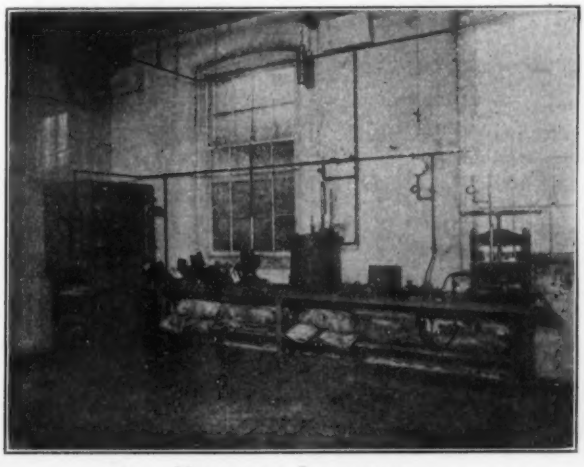


PHYSICAL LABORATORY.

with the perfect assurance that they will do the work for which they are intended.

In addition to the Research Laboratory, where new experiments are being constantly tried, there is the Routine Laboratory, where all the factory supplies, crude rubber, chemicals, etc., are subjected to a thorough examination before put into factory use.

In the Physical Laboratory the specific gravity of finished goods is tested. This laboratory has become exceedingly important since the demand for rubber balloon and aeroplane fabrics. Every piece of this fabric is tested for hydrogen leakage. To weigh hydrogen requires very delicate scales. The balances which the two young men in the accompanying picture are watching will weigh to 1/10,000 part of a gramme.

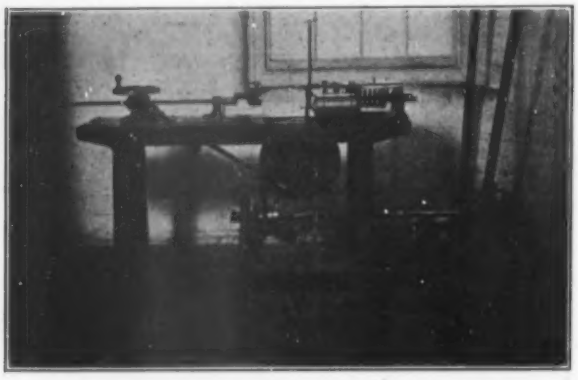


MECHANICAL LABORATORY.

In the Electrical Laboratory, an illustration of which is also shown, the dialectric strength of the company's various products, in connection with the electrical industry, is tested. The apparatus used here is capable of a pressure of 20,000 volts. It goes without saying that this has to be used with extreme care. You can judge of the power of this apparatus when you reflect that the average electric pressure in house lighting is only about 200 volts.

The Experimental Department is in reality a small model factory, complete in every particular. Here new compounds are tried, and finished samples turned out before being taken up on

a large scale in the factory proper. In the Mechanical Laboratory, the tensile strength of all fabrics used in the factory is tested, from the lightest sheetings to the heaviest duck for belting.



A TESTING MACHINE IN MECHANICAL LABORATORY.

This elaborate apparatus for testing every step of manufacture and insuring the perfect accuracy with which every step is taken tells the whole story of this company's great success. There is nothing mysterious about it—it is the logical result of the exceptionally scientific methods which the company employs.

SOME RUBBER INTERESTS IN EUROPE.

AUSTRALIAN IMPORTS OF RUBBER GOODS.

OFFICIAL returns show that for the nine months ended September, 1911, the imports of rubber goods into the Commonwealth of Australia represented $3,517,135, as compared with $2,392,405 in the corresponding period of 1910. That this country has only to a limited extent participated in the movement, is indicated by a comparison of the figures published December, 1910, and December, 1911, by the INDIA RUBBER WORLD:

UNITED STATES EXPORTS TO AUSTRALIA (*fiscal years.*)

	1910.	1911.
Belting, packing and hose	$127,446	$112,890
Boots and shoes	177,924	161,882
Other goods	101,039	143,432
	$406.409	$418,204

Including:

Tires for automobiles, not separately shown	$3,292
All other tires, not separately shown	4,108

(Previous to 1911 tires were returned with other goods.)

It is therefore evident that the purchasing capacity of Australia is largely extending, although the increase in the export of American rubber goods to that market has only been about 3 per cent. in 1911 as compared with 1910.

The 24 Australian rubber factories produced in 1909 goods valued at $1,822,073, while the imports for the entire fiscal year 1910 represented about $3,000,000.

CALENDARS RECEIVED.

Meyer Cohn, Hanover, Germany, has issued an useful calendar, with a cardboard mount, which shows twelve months of the year, and with a large central pad which devotes one page to each day. This is intended for wall use in the office or factory.

The wall calendar distributed by the North British Rubber Co., Limited, Castle Mills, Edinburgh, is a very substantial affair. It is printed in three colors on heavy cardboard, 12 x 18 inches in size, and has a pad with a page for each day showing the numbers in large-sized type.

The "West India Committee Circular," a London publication devoted to the interest of the West Indies, has distributed a small calendar, printed in one color, showing a tropical scene.

SUGGESTED CHANGES IN GOVERNMENT RUBBER SPECIFICATIONS.

AS reported in the last issue of the INDIA RUBBER WORLD, a conference took place on December 15 between the Washington authorities and a committee representing the rubber manufacturers, concerned in the removal of the present restriction of government specifications, to the use of Fine Upriver Pará.

The joint committee appointed on that occasion was composed as follows:

REPRESENTATIVES OF THE GOVERNMENT.

Bureau of Standards (Physicist and Chemist)
Bureau of Chemistry (Dr. P. H. Walker).
Bureau of Steam Engineering (Commander L. A. Kaiser, U. S. N.).
Bureau of Yards and Docks (Civil Engineer Chambers, U. S. N.).
Bureau of Supplies and Accounts (New York Chemist, J. P. Millwood).
Bureau of Construction and Repair (Naval Constructor, E. S. Land, U. S. N.).
Isthmian Canal Commission (W. A. E. Doying).

REPRESENTATIVES OF MANUFACTURERS' INTERESTS.

Boston Woven Hose & Rubber Co. (J. W. Fellows).
B. F. Goodrich Co. (Dr. W. C. Geer).
Revere Rubber Co. (W. F. Jones).
Diamond Rubber Co. (D. C. Noble).
Manhattan Rubber Mfg. Co. (H. S. Doty).
Rubber Goods Mfg. Co. (D. A. Cutler)
Gutta Percha & Rubber Mfg. Co. (W. W. Spadone).

Mr. Fellows is Chairman of the Manufacturers' Sub-Committee and Dr. W. C. Geer, Secretary; the Chairman of the joint committee being Naval Constructor E. S. Land.

The Manufacturers' Sub-Committee held an initial meeting at Washington on the occasion of the conference of December 15, when it was stated to be the intention of the committee of the whole to take steps towards the revision of the navy specifications, submitting the results in the course of one or two months. The Joint Committee held a meeting on December 16, in which methods of procedure were outlined.

In a circular letter addressed to rubber manufacturers on December 19, the Manufacturers' Sub-Committee asked their opinion upon the elimination from Navy Department specifications of references to chemical composition (Pará, sulphur, or mineral matter) and the substitution of sufficiently severe physical tests, so that the Department might be assured that any article passing these specifications would be at least of as high grade as that which they now receive and of equal or better durability.

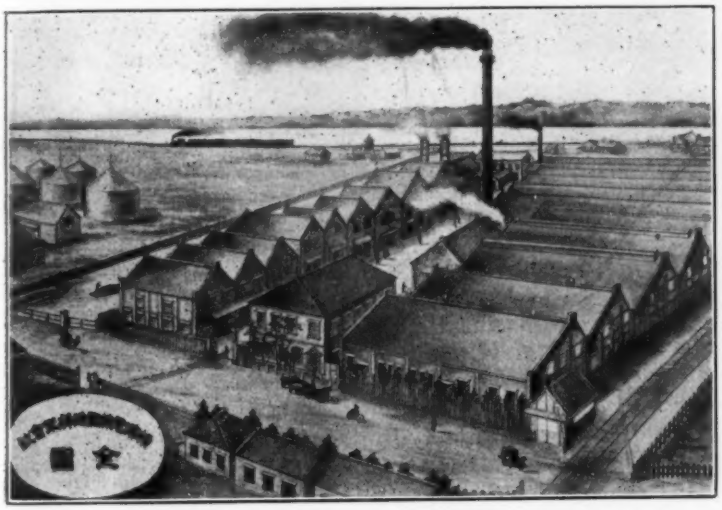
A second meeting of the Manufacturers' Sub-Committee was held in New York on January 16, where very satisfactory progress was made; the many tests which each of the committee had made during the previous month being of great assistance in reaching conclusions. The methods of test and testing apparatus were put into shape for further consideration. Another meeting is to be held in February, and the committee is understood to be desirous of receiving suggestions from anyone interested in this matter of specifications.

The Rubber Industry of Japan.

(By our Special Correspondent.)

THE YOKOHAMA ELECTRIC WIRE WORKS.

NOW ranking among the largest of the Japanese insulated wire and cable manufacturing companies, this factory was established in 1895 with a capital of $25,000 by Messrs. Hiranuma, Watanabe, Wakao, Kimura and Onishi, prominent Yokohama business men. The growth of the plant was in proportion to the additions made to its capital, which became successively, $50,000; $100,000; $150,000 and $600,000; these increases extending over a period of 14 years.



COMPLETE VIEW OF YOKOHAMA ELECTRIC WIRE WORKS.

With the object of studying the manufacture of rubber-covered insulated wires, Mr. Y. Hashimoto was sent to Europe; Mr. M. Wachter, a German expert being engaged to improve the operations of manufacture, and Mr. S. Tanakai, chemist and Bachelor of Engineering, becoming chief engineer. The latter, upon leaving the works, was succeeded by Mr. E. Hata, assisted by Mr. M. Yokoyama, likewise a Bachelor of Engineering. Under the expert direction of these engineers the works made remarkable progress, not only in rubber-covered wires but also in many other descriptions.

In connection with a reorganization taking place July, 1908, capital to the extent of $325,000 was invested in the stock of the Yokohama company by the Furukawa Copper Company, from which the first-named concern had long been purchasing copper wire. The Furukawa Company thereupon gave up the intention of establishing its own electric wire and cable manufacturing company.

About a year before this fusion, the Yokohama premises were burnt; being replaced in August, 1908, by a new and extensive plant. In 1910, after the departure of Mr. E. Hata, the post of chief expert was filled by Mr. D. Coyle, who came out from England for that purpose. New machinery and buildings are now under construction, for the manufacture of paper-insulated cable, which will be completed by April next, and have involved the investment of further capital to the extent of $250,000.

The main works of the company are situated at Ura-Takashimacho, Yokohama; the Osaka branch factory being at Kyomachitori, Nishiku, Osaka; covering in all five acres, of which the buildings occupy three acres. A separate building will be devoted to the manufacture of paper cable. The motive power is furnished by three boilers, one engine and one dynamo, while the hands (exclusive of those in the paper cable branch) at present number 850.

In the electric testing room, there are English high insulating and high-pressure testing apparatus for break-down test of 60,000 volts. The machinery for manufacturing lead-covered rubber wires ⅛ inch to 4 inches is of German construction.

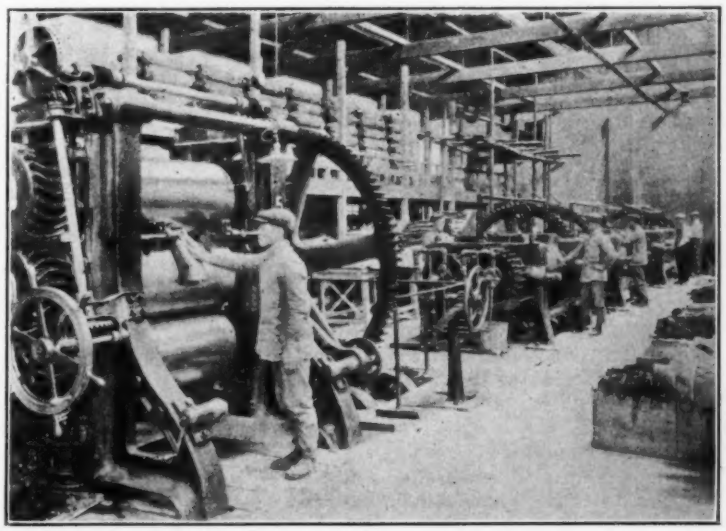
The principal branches of production are:—

1. Electric insulated wires and cables; cotton-covered weatherproof wires; lead-covered insulated wires; armored and military service wires and cables; silk or cotton lamp cords, etc.
2. Joint boxes, junction boxes, etc.
3. Lead, gas and water pipes.

Among the principal divisions of the works are: Stranding shop, rubber shop, rubber drying room, braiding shop, lead covered shop, compounding shop, finishing shop, tinning shop, etc. The annexed illustrations show a complete view of the works; the washing roll, mixing roll and calender room; and the braiding shop, with large productive capacity.

AMERICAN TRADE WITH JAPAN UNDER NEW TARIFF.

Statistics of American shipments to Japan during August last are of special interest as indicating which articles can stand the duties of the new Japanese tariff. By the report of the Consul for Japan at New York for the month of August, shipments of rubber boots and shoes, which had been temporarily interrupted (as shown in the INDIA RUBBER WORLD, December, 1911, p. 132), had been resumed, though on a smaller scale. The new Japanese tariff went into effect July 17, 1911. The figures show:

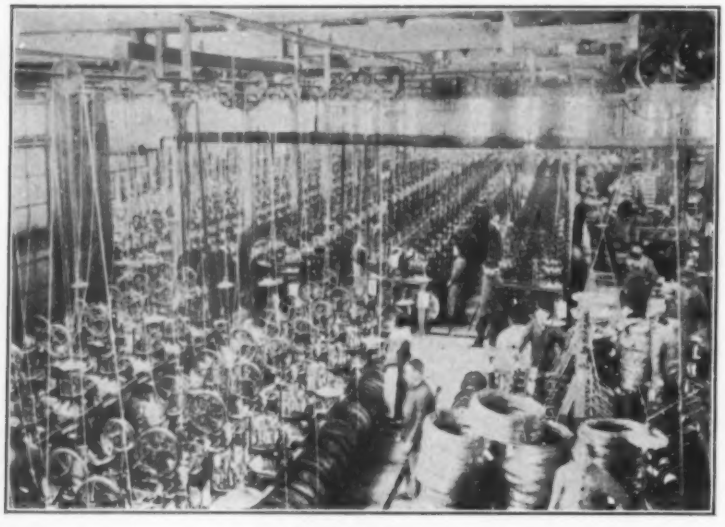


WASHING ROLL, MIXING ROLL AND CALENDER ROOM.

RUBBER BOOTS AND SHOES.

Japanese imports, June, 1911.....	5,814 pairs	$2,720
Japanese imports, August, 1911....	none.	none
New York shipments, August, 1911.	2,632 pairs	$1,669

Shipments from New York in the above line for the eight months ending August 31 had been 47,100 pairs, value $35,252. Owing probably to the effects of the new Japanese tariff, it will be noticed that August shipments were only about half the monthly average for eight months of 1911.



BRAIDING SHOP.

MEIJI RUBBER WORKS, TOKYO.

Since its establishment in 1900, this company has accumulated a reserve of $50,000 beyond its capital of $25,000. Owing to the technical director, Mr. A. T. Ferguson, being an Englishman, the machinery and business policy of the company is English in character, while its relations with the Japanese government and other large consumers ensure it a steady and remunerative business. Its motive installation represents 250 h. p. and it has a staff of 220 male and female hands; the annual production being from $450,000 to $500,000, including mechanical goods, medical appliances, mats, tires, balls, and a large variety of articles. The average annual consumption of crude rubber is about 22,000 pounds, of which one half comes from South America, one fourth from Africa and one fourth from Ceylon, Singapore and Oceania.

MITATSUCHI RUBBER MANUFACTURING CO., TOKYO.

Originally started on a small scale in December, 1884, this concern is now perhaps the largest Japanese rubber company; occupying a space of 3.31 acres, of which the buildings cover 1.22 acres. The original capital of $40,000 has been supplemented by the establishment of a reserve fund amounting to $222,230. The motive installation represents 715 h. p.; the boiler and engines being of the Lanarkshire type, and the electric motors having an aggregate of 18 h. p.

The working staff includes about 180 male and 196 female hands, while the manufactures are very diverse in character, comprising mechanical goods, tires (for bicycles, not for jinrikishas), overshoes, rubber belts, mats, ebonite, etc. In overshoes this is said to be the only factory in Japan, and it has successfully met foreign competition in various other lines. Its consumption of crude rubber in 1910 represented 196,800 pounds; (about one-eighth of the total Japanese import), of which 192,000 came from Borneo, and the balance in equal quantities from South America and Africa.

YOKOHAMA IMPORTS SEPTEMBER AND OCTOBER, 1911.

The Yokohama imports of crude rubber were in September, 1911, 125,828 pounds, value $99,791, and in October 57,539 pounds, value $42,877.

As to manufactures of rubber, the comparative imports of the two months in question showed an increase in hard plate rubber of United States manufacture from $165 to $4,363, while under the head of rubber manufactures not otherwise specified, the share of the United States rose from $972 to $1,410.

In the quantities of insulated electric wire, there seem to have been various changes in the sources of supply, as follows:

	September, 1911, *pounds.*	October, 1911, *pounds.*
Great Britain.....	188,575	19,488
Germany	1,604	221,288
Italy	3,475	.....
United States	11,959	535
Total pounds	205,613	241,311

Germany would thus seem to be gaining a footing in Japan in the branch named.

Bicycle tires from Great Britain showed for September a value of $16,375, and for October, $26,799; while there were in the later month no receipts from the United States, as compared with $1,308 in September.

Rubber overshoes from the United States show a decrease from $6,429 to $550, between September and October.

While these figures only refer to the port of Yokohama, they are fairly representative of Japanese imports generally.

JAPANESE-MALAYAN PLANTATION COMPANY.

The Kyushu Rubber Co., Limited, is being established at Midzugae-Machi, Saga City, Sagaken, Japan, under the direction of Mr. H. Nakamizo. Its object is to acquire the lease of 1,000 acres in Johore, for the cultivation of rubber, planting 300 acres a year. The capital amounts to $60,000, one-fourth of which is to be called up at first. It is estimated that about $49,000 will be devoted to the expenses of plantation and cultivation during the first five years.

A GERMAN CRUDE RUBBER RETROSPECT OF 1911.

DEALING with the prominent features which marked the German rubber industry during 1911, the *Gummi-Zeitung* remarks as to crude rubber, that manufacturers commenced the year 1911 with stocks of dear raw material on which substantial losses had to be written off. These losses in the German rubber industry are estimated to have represented a total equalling about $1,250,000.

The reduced quotations for rubber goods, permitted by the fall in rubber, led to increased business and to the establishment of new factories, competition being thus rendered keener. It was regarded as a fortunate circumstance that the downward tendency of crude rubber prices was interrupted by periods of recovery, the loss to manufacturers on their older stocks of rubber being thus diminished. This feature of the market was accentuated by the relatively higher prices of medium grades.

An idea of the relative positions of crude rubber and manufactured rubber goods is afforded by the fact that while in 1910 the former advanced 70 to 80 per cent., the prices of the latter in Germany went up only 30 per cent.

NOTES FROM BRITISH GUIANA.

(By Our Special Correspondent.)

THE CHANCES FOR CAPITALISTS.

THE elections to the local legislature are now at an end and they have resulted in considerable changes. The claim that was made from several plantations that capital and population are needed for the development of this colony, and that capital is not likely to be attracted here by a legislature composed of the people's representatives, who are chiefly lawyers, seems to have had due effect upon the electors, for they have returned members representing capitalists operating in the colony, chiefly those concerned in the sugar industry, but among those returned are some members who have an intimate knowledge of the rubber and balata industries and their problems. The legislature, as at present constituted, promises to look after the interests of capital, and it is probable that a mistake such as that which led to an export duty being imposed on balata will not be repeated.

CAPITALISTS AND RAILWAY CONSTRUCTION .

Colonel J. W. Link, who was instrumental in floating the Consolidated Rubber & Balata Estates, Limited, and the Amsterdam Balata Co., and who endeavored to secure a concession for the building of a frontier railway four years ago, has returned to the colony. He reports his intention of proceeding with his railway project and contemplates a through line from Georgetown to Manáos, thus tapping not only the balata districts in this colony, but the rich rubber areas of the upper Amazon also. His last advice was turned down because the government of the day considered the demands made were excessive. That administration has now closed and the colony is awaiting the arrival of a governor, who will come here at a larger salary and who, it is anticipated, will be an officer experienced in the difficult task of developing backward colonies which are rich in resources.

THE GOVERNMENT AND THE BALATA INDUSTRY.

At a recent meeting of the Balata Association an interesting suggestion was made by Mr. Edward Edwards (representing Ed Maurer) to the effect that the present export tax on balata should be abolished and a royalty of six cents charged, the money collected from this source being allotted to the work of establishing wireless communication and constructing roads for the benefit of the balata industry. It was urged that six cents would be a heavy royalty, but it was decided to communicate the proposal to the government, suggesting that a royalty of five cents should be imposed. The request is not an unreasonable one, because in spite of the considerable sum realized by the government from the balata industry in royalty, export duty and license fees, it does practically nothing for it in return.

In this connection an interesting letter has appeared in the local press, stating that no company or individual would object to pay a royalty of five cents (no export duty) provided that two-thirds of the royalty should be spent in opening up the country by means of communication (either by telephone, telegraph or wireless) and by roads.

"Let the Government borrow £100,000 for this purpose; there would be no difficulty in finding the money. Taking the production of balata at one million pounds per annum, the royalty would, at five cents, be approximately £10,500; two-thirds of which, viz., £7,000, would pay 4 per cent. interest on the loan, £2,000 per annum to be set aside for repayment of the capital, leaving £1,000 per annum plus the charges for messages (wireless or other), for upkeep of stations and roads. Such a scheme will not benefit the balata industry alone, but the whole colony."

RUBBER PLANTERS TO COMBINE.

The same writer urges rubber planters to join the Balata Association, asking what guarantee they have that when their plantations come into bearing an export tax will not be put upon rubber. It is understood that steps are to be taken to include the representatives of all forestal industries in the association. Whether this will too greatly broaden the scope of the association's activities is a matter that must be left to its executive officers to decide.

STATISTICS OF THE BALATA INDUSTRY.

Some interesting statistics are given in the administration report of the Commissioner of Lands and Mines, which has just been published. The value of the balata industry to the colony's revenue is demonstrated by the fact that the amount paid in royalty increased from $5,853.16 to $26,818.48, while receipts will reach an even larger total in this financial year, since all balata won now pays an export duty of two cents on every pound. The commissioner points out that the balata industry now pays a rent of $20 per annum on each collecting license of approximately 50 square miles; 2 cents per pound in royalty on all balata collected; and an export tax of 2 cents per pound on all balata exported.

COOLIE HUT ON SUGAR ESTATE, B. G.

Rubber, of course, has not yet begun to return considerable sums to the revenue. Indeed, only 1,156 pounds were exported in 1910-11 against 6,369 pounds in 1909-10, and yielded a return of only $23.12 to the revenue.

EXPORTS OF RUBBER AND BALATA.

Balata exports to November 23 totaled 921,752 pounds, against 1,105,833 pounds to the same date last year. Rubber exports have totaled 3,580 pounds against 1,534 pounds.

MR. E. EDWARDS AND THE LABOR PROBLEM.

Mr. E. Edwards, when acting secretary to the British Guiana Balata Association, sent a letter to the government concerning the labor problem, which the government has just answered, and which has now been published. A government commissioner has been appointed to deal with the issues raised by Mr. Edwards, who sets forth the problem in a concise and interesting fashion. He points out that at the present time laborers for the balata industry require under the regulations to be registered not more than six months for particular grants, and under particular foremen, whereas the contracts entered into are for terms of nine and twelve months. The registration period, therefore, is inconvenient and troublesome because bleeders often think they are not bound to be re-registered for the unexpired term of their contract. The system of registering for specific grants has also been found inconvenient, "as through accident or other misfortune, such as false reports by prospecting parties, which unfortunately, do not render the guilty person liable to prosecution, it is often impossible to put the men on the grants mentioned in the contract. Other grants may be open for work and the men often refuse to go there."

Dealing with the punishment of men who break their contracts Mr. Edwards says: "It has been proved that bleeders once they

have become indebted become callous and openly state that they prefer to go to jail than to complete their contracts." He suggests that contracts should be completed after a sentence of imprisonment has been served for breach, and that others engaged in the same industry should be debarred from employing such men until they have done so, pointing out that such a remedy is recognized in the existing Immigration Law of the colony and that some such provision exists in Surinam. He suggests that bleeders should be registered by a government department.

THE BLEEDING REGULATIONS.

Mr. Edwards referred in his letter to the bleeding of trees: The restriction in the regulations as to bleeding is positive, but from the information received it is clear that any bleeding, often repeated, kills the trees eventually, he says. The primitive method of bleeding with a cutlass, done under any restrictions, is likely to wound the tree to such an extent that rot and decay set in. On the other hand statements have been made by old bleeders that they have seen trees that have been bled right round still in good health and yielding latex freely. This question is of great importance and all the available information on the matter should be gathered.

The government has replied that with the assistance of Professor Harrison, director of Science & Agriculture, the acting governor is causing inquiries to be made of all persons or scientific institutions from whom it is thought reliable information as to the life history of the balata tree may be obtained.

THE AMERICAN EXHIBITION. THE COLONY TO BE REPRESENTED.

At a meeting of the Permanent Exhibition Committee, held on December 6, it was resolved that the colony should be represented at the Rubber Exhibition, to be held in New York in 1912; but, in order to effect economy, if possible, it was resolved to communicate with the secretary of the Permanent Exhibition Committee of Trinidad, to ascertain whether that committee was prepared to consider a joint exhibit. The proposal that the colony should be represented at all events provoked very little discussion; the desirabilty of the suggestion being manifest to all. Indeed, it was pointed out that the development of the industry is likely to spring to a much greater extent from the United States, both from the point of view of supplying capital and of providing a market. The fear is entertained here that the superior attractions of the Eastern plantation rubber industry are likely to withdraw the attention of British capitalists from the possibilties of this colony as a profitable field for the investment of capital in rubber. At all events, the colony is going to see what it can do by bringing its attractions before the American rubber interests. It was pointed out at the meeting to which I have referred that the colony's expenses at the British exhibition amounted to £101 3s. 11d.

RUBBER TAPPING. INTERESTING EXPERIMENTS.

A report has been published by the Department of Agriculture, of the results of a long series of experiments, carried out on wild *Sapium Jenmani* trees. The tappings have proceeded over a period of two years. The results are said to be valuable from a scientific point of view. "It must be pointed out and emphasized that the results apply only to old *Sapium Jenmani*, growing in conditions such as obtain on river banks"; says the report, "they do not justify any conclusion being drawn as to the behavior of young trees on plantations on higher and drained lands."

The following are the results of the experiments: "The trees yielded latex very freely when first tapped, and produced rubber of very high quality, not subject to 'tackiness.' The yields of latex and consequently of rubber rapidly fell off during successive tappings and the rubber obtained from the tappings was subject to 'tackiness.' This tendency increased during subsequent tappings; until some, if not all, of the trees, when exhausted by frequent tappings, yielded latex from which coagulated rubber was not obtainable. It was noted that the tapped part of the trees ran practically dry of latex after three to six successive parings. There were no signs of wound response. When the lower part of the trunk of a repeatedly tapped tree was practically exhausted of rubber-yielding latex, the higher parts of the trunk yielded latex in relatively large quantity, and while the rubber from the latex of the lower part of the tree might be very 'tacky,' or more or less resinous and coagulable with difficulty, that yielded by the upper part, was of very good quality. The wounds made on the bark of the tree during tapping, were found to heal very slowly and unsatisfactorily. The tendency to 'tackiness' was much more noticeable in biscuits prepared from the latex, than in carefully prepared self-coagulated 'scrap.'"

The report concludes with some interesting figures: "During a period of two years the yield of dry rubber from mature *Sapium Jenmani* trees of various sizes from 30 to 92 inches in girth, at three feet from the ground—the great majority of them, however, measuring between 40 and 90 inches in circumference—was 15.33 ounces per tree. The trees were tapped up to a height of six feet or seven feet from the ground, and were bled to practical dryness. The proportion of rubber appeared to vary considerably. The latex obtained in 1905 yielded about 18 per cent. of dry rubber, that of two trees tapped for the first time in 1910 contained 15 per cent; while that yielded by trees which had been subjected to tappings during several periods contained about 11 per cent."

The percentages of "rubber" in the dry rubber of the biscuits of the various qualities, was found by analysis to be:

	"Rubber" in dry rubber.
Excellent rubber from first period	94.5%
Weak, inclined to be tacky, from 2nd to 3rd periods	93.6%
Quite soft, and very tacky, from 3rd period	92.4%
Soft, tacky, resinous, coagulated mass from 4th period	51.3%

(The proportion of "chemically pure" rubber extracted on analysis varied in similar fashion.)

The Government Economic Biologist, lately appointed, has been turning his attention to the insects and pests attacking rubber in the colony, and planters have the consoling assurance that his researches have not, up to the present, been productive of very alarming results. He reports that a species of scale insects seems to be the most prevalent, which attacks the younger shoots, giving them a characteristically "warty" appearance, and often causing their death. Careful investigation is advised, and the appearance of these indications is to be resisted by the timely application of a good rosin compound wash, which is guaranteed to prove effective. Another scale is said to be fairly prevalent, but does not do much mischief, and can also be dealt with by means of the rosin wash. Ants occasionally do considerable damage to young trees, sometimes, completely defoliating them. The method of prevention advised in this case is to trace the offenders to their lair. Having found their nest, all holes leading to it are to be closed with earth or clay; several holes are then to be bored to a depth of about half a foot, in the centre of the nest, and about two ounces of carbon bisulphide should be poured into each hole, the hole being plugged with earth. Such methods are warranted to consign these troublesome pests to a place where insects cease from troubling.

The larvae of two varieties of hawk moth commit depredations on the leaves of young trees, but they may be kept in check by hand picking, being easily discernible and not numerous. A species of locust has done some damage, but these also may be caught by hand, and are not sufficiently numerous at present to create any anxiety. The rubber planter here at present has little cause for uneasiness in this respect, and a little vigilance will secure him immunity from such troubles.

Some Notes on Rubber Planting.

FIVE TONS OF RUBBER STOLEN.

ACCORDING to details received, the United Temiang Rubber Estates (Limited), State of Negri Sembilan, Federated Malay States, had met with a loss which reduced its shipments for the year ending July 31, 1911, from 35,839 pounds (as they should have been, according to the total of the monthly outputs) to 25,702 pounds. This loss of about five tons was caused by the stealing of the rubber which had accumulated during the erection of the factory, now completed.

POSSIBLE PROHIBITION OF COOLIE LABOR IN MALAY STATES.

It is reported from Singapore that a law has been passed empowering the government to withdraw the present sanction for the employment of coolie laborers, this step being due to a gross case of lack of supervision upon a rubber estate. In view of the actual and prospective further importance of coolie labor in the rubber production of Malaysia, such a change would have far-reaching consequences. The action of the authorities will therefore be observed with interest.

THE RECENT DROUGHT IN THE MALAY STATES.

In the report of the Federated Malay States Rubber Co., of Antwerp, reference is made to the fact that from March to June last, the drought in the Malay Peninsula and the Sunda Islands affected the yield of all plantations in those parts of the Far East. Fortunately, it is added, such a trouble is rare, no similar instance being on record since 1898, at which time rubber cultivation had only assumed very modest proportions.

FIRST TAPPINGS OF KAMERUN COMPANY'S FUNTUMIA TREES.

The Kamerum-Kautschuk-Compagnie A. G., at the recent Berlin meeting, reported that about 4,500 acres were under cultivation; the number of trees including 1,740,000 *Kickxia* (*Funtumia*) and 240,000 *Hevea*. During last summer, the oldest Funtumias (planted in 1906-7) were tapped; the average result being about ½ oz. per tree. Encouragement is expressed at the prospects indicated by the results of these first tappings.

COOLIE CATCHING AND RUBBER PRODUCTION.

The fact that the total number of coolies arriving in Ceylon for the seven months ending July 31 was only 48,653, while Malayan arrivals in the six months ending June 30 numbered 54,602, has been commented upon in the "Malay Mail" as illustrating the progress of the younger country. It is added that the inducements which contributed to this result ought to achieve much more in the future; this being particularly the case as to free passages, as well as the efforts of planters to make the lives of their estate coolies more than merely bearable.

HEXAGONAL PLANTING.

In a statement made at the recent meeting of the Tandjong Rubber Company, whose property is situated on the East Coast of Sumatra, Mr. Victor Ris, the agent who had lately visited the plantation, reported that it is planted 21 feet by 21 feet in hexagons, each tree forming the center of a circle divisible by the radius into six equal parts. In ordinary planting in squares where all the sides of the squares are 21 feet, 99 trees are planted to the acre, while by hexagonal planting the number is increased to 115, each tree being exactly 21 feet from the other. The only difference is that the row is about 18 feet distant from the next one.

SCOTTISH MALAY RUBBER CO., LTD., (FEDERATED MALAY STATES).

Registered February, 1906; planted area, 1,577 acres. Crop to November 30, 1910, 26,580 pounds; 1911, 88,411 pounds.

COMPARATIVE RESULTS OF HEVEA AND FICUS.

Dealing with the above question at the recent meeting of the Langkapoera (Sumatra) Rubber Estate, Limited, Mr. W. O. Burt, chairman of the company, stated that until lately the theory was strongly held in Netherlands India that *Ficus elastica*, being an indigenous tree, would in the end prove more satisfactory than *Hevea*, owing to its hardness and immunity from disease. Results have, however, shown that regular yields cannot be depended upon from Ficus, the very best yields of that variety being much poorer than those of *Hevea*. Planting with *Hevea* is now being proceeded with, interplanted with *Robusta* coffee.

TEMPEH (JAVA) RUBBER.

Various facts of interest were reported at the recent meeting of the above company. Mr. Brugmann, the Amsterdam expert, had pointed out that while some of the ground is undoubtedly high, judged by the F. M. S. standard, it is sheltered from strong winds by high mountains. Mr. Turner, an English authority, had stated that some of the best-grown trees are on the highest land and that from the free flux of latex he had noticed in experimental tappings, the yield would, in his opinion, not be appreciably affected by the altitude. The planting has chiefly been of *Hevea*, which policy will be pursued, as indicated by the contemplated addition of 300 acres in that variety.

DUTCH GOVERNMENT ENCOURAGEMENT OF RUBBER PLANTING IN JAVA.

At the annual meeting of the United Serdang (Sumatra) Rubber Plantations, the chairman (Mr. Arthur Lampard) referred with appreciation to the fact that the Dutch government, with the desire of developing the wonderful territory of Sumatra, had adopted the English method and had extended a cordial welcome to all capital from whatever source it came. With the object of encouraging the rubber plantation industry in the Dutch Indies, the government had abolished all export duty on cultivated rubber,

TAXATION IN THE FEDERATED MALAY STATES.

Dissatisfaction has been expressed at the fact that the Federated Malay States, with a surplus exceeding $40,000,000, is needlessly penalizing the rubber industry, by the imposition of an export tax of 2½ per cent., although such a duty exists neither in South India nor in Ceylon. As Mr. Arthur Lampard has lately remarked: "The policy of the authorities appears to be that they consider rubber so profitable that they can tax it without giving anything in return. . . . There is no money for making Port Swettenham into a proper port."

RUBBER IN NIGERIA.

Official reports indicate that under the influence of high prices, combined with the opening up of certain districts in the western province, exports of rubber from Nigeria rose from 1,388,009 pounds valued at $545,375 in 1909 to 2,634,023 pounds valued at $1,558,455 in 1910. The respective quantities from Northern and Southern Nigeria in 1910 were 519,943 pounds and 2,123,080 pounds, the preponderance of the latter as a source of rubber being thus illustrated.

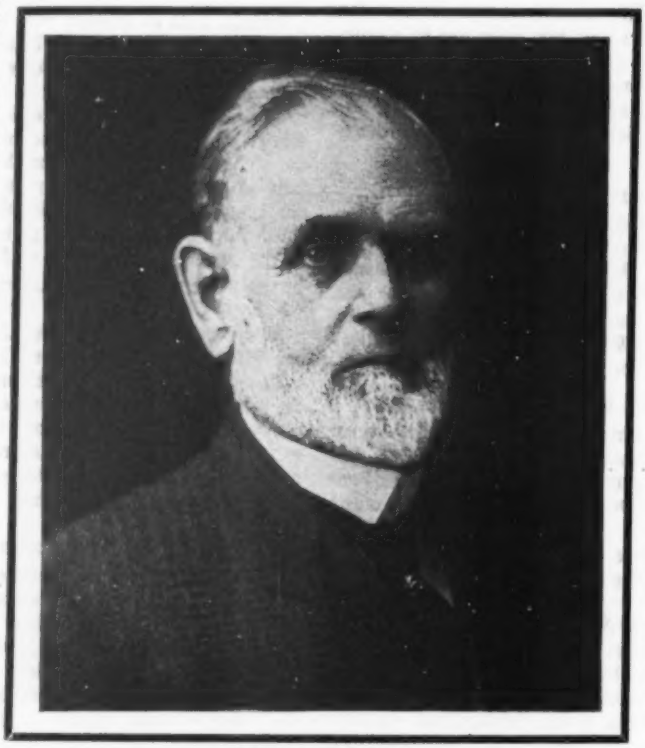
Much interest attaches to the experimental tapping of several thousand *Funtumia elastica* trees of the native communal plantations, the rubber being prepared under the supervision of and by members of the Forest Department in the presence of the owners. Rubber of the first quality was prepared by means of simple appliances, easily procurable by the natives. The clear amber-colored biscuits thus obtained were eventually sold in the English market at within 12 cents of the price at the time of the best Pará, while the loss of weight through evaporation of moisture was 37.7 per cent.

Obituary Record.

FRANKLIN FARREL.

FRANKLIN FARREL, president of the Farrel Foundry & Machine Co., died after a few hours' illness on January 9, at his home, Tower Hill, Ansonia, Connecticut. In his death Connecticut lost one of her leading citizens, and New England one of those sterling characters which typify New England at her best. Mr. Farrel is reported to have been possibly the richest man in his state, and to have left a fortune of close to $15,000,000. But this is not all he left; it is, in fact, the smaller part; for he left a record of a long and useful life, full of wise acts, worthy deeds, and a wide influence for good.

Franklin Farrel came of a good old New England stock and inherited the virtues of strong integrity, sound common sense, and a delight in hard work. He was born in Waterbury, February 17, 1828, being the eldest son of Almon Farrel, a noted mill builder of his day. After a few years' of schooling (about the usual period devoted to education in those days), he began at the age of 14 to assist his father, and first went to Ansonia in that capacity in 1844, when his father was constructing the water works and copper mill at that place. In 1849 the older Farrel became associated with several partners in the foundry firm of Farrel & Johnson, which, a few years later, was reorganized under the name of the Farrel Foundry & Machine Co., Almon Farrel being the president, and remaining in that office until his death in 1857, when he was succeeded by his son Franklin. From 1857 for over 54 years, until the day of his death, Franklin Farrel was the president and dominating factor in this great manufacturing company, which grew in size and success from year to yaer, and which became in time one of the largest manufacturers of rubber machinery in the world, a position which it has maintained for many years.



FRANKLIN FARREL

Mr. Farrel did not confine his energies to this enterprise, vast as it was. Many years ago he became interested in other factory enterprises in the vicinity of Ansonia, especially the H. A. Mathews Mfg. Co., of Seymour, and the Bridgeport Forge Co., of Bridgeport. He also became a director in the Ansonia National Bank, and the Colonial Trust Co., in Waterbury. But even these enterprises did not engross his time. In 1877, in conjunction with his brother-in-law, A. F. Migeon, he became interested in a large way in mining in Montana. They formed the Parrot Silver & Copper Company, which proved remarkably remunerative. They continued this enterprise until 1899, when they sold their property to the Amalgamated Copper Co. His copper interests added materially to Mr. Farrel's already considerable fortune.

Nor were his activities confined exclusively to this country, for many years ago he added sugar raising to his other interests, and for many years had a large plantation in Cuba and two in Santo Domingo, keeping these properties until 1901.

His commercial activities, however, did not exhaust his energies or his interests, for during all his life he was active in philanthropic and charitable work. He gave liberally of his time and generously of his money to Christ Episcopal Church in Ansonia, of which, at the time of his death, he had been senior warden for 20 years. He was, moreover, a man of most companionable temperament, and exceedingly popular in the social circle in which he moved, and in the various clubs to which he belonged while better still he was deeply beloved by all the employes in his various enterprises. The most impressive feature of his funeral was the line of 1,000 workers from the foundry, who, an hour before the funeral, gathered at the great mill, formed in procession, and walked reverently and with every manifestation of sorrow to the church, where the body lay in state, to take their last look on the familiar face, which they had so long respected and loved.

The funeral services were held in Christ Church Saturday morning, January 13, and were attended by a great throng of people from all that section of Connecticut. During the hour of the funeral all the stores in Ansonia were closed, the banks were locked, all the mills shut down, and even the cafes and restaurants closed their doors and drew their shades.

He is survived by his wife, a son, Franklin Farrel, Jr., and four daughters, who deeply mourn his loss.

HON. GEORGE W. CROUSE.

Hon. George W. Crouse, one of Akron's pioneer rubber men, who for many years has been a director of the B. F. Goodrich Co., a close friend of the late Dr. B. F. Goodrich, Mr. Work and Mr. Perkins, died at his home in Akron January 5, 1912.

Mr. Crouse was a member of Company F, 164th Ohio Volunteer Infantry. He was a warm friend of Buchtel College, and donated funds to erect a gymnasium which now bears his name. He was an ardent Republican, and served in many public capacities. In the 80's he represented his district in Congress. He always took a warm interest in anything that benefited Akron, whether public or private. He served on the Board of Education, City Council, as trustee of Buchtel College, and was one of the founders and for many years president of one of Akron's oldest banks. He was founder and one of the most active business men of The Buckeye Mower & Reaper Works. He was associated almost from the beginning with the B. F. Goodrich Co., being a member of the board of directors until the time of

his death. He was patient and considerate, a tireless investigator, an admirable counsellor, and lived a life of intense business activity.

Senator Crouse's whole life was spent in Akron and Summit County except the years on the battlefield and in the halls of Congress. His achievements in the upbuilding of large enterprises, his helpfulness to young men struggling for success in commercial enterprises, and the high type of citizenship for which he stood, make his loss exceptionally felt.

JOSEPH B. SPARKS.

JOSEPH B. SPARKS, aged 74, for 26 years an expert calender man at the plant of the National India Rubber Company, Bristol, Rhode Island, a former president of the Bristol Town Council and well known G. A. R. veteran, died at his home in the Rhode Island town on the morning of January 9 after a two weeks' illness. The funeral was held three days later.

Mr. Sparks was a member of a well-known family and leaves many relatives who are prominent in Bristol affairs. He was a member of Babbitt Post, G. A. R., and served in the Civil War from May 5, 1861 to June 17, 1864. He took part in many battles, from the first at Bull Run to the campaign in the Wilderness where he was slightly wounded in the ankle by a stray bullet.

DENNIS F. SCANLON.

DENNIS F. SCANLON, who for a number of years was a foreman in the plant of the National India Rubber Company at Bristol, Rhode Island, died at his home in that town January 14 from a paralytic shock. During his younger days Mr. Scanlon was prominent in sporting circles. He was 47 years old.

His widow, Mrs. Julia Scanlon, and two children, as well as two brothers and three sisters, survive him.

NEW TRADE PUBLICATIONS.

JOS. FYNNEY & CO., india-rubber merchants and importers, of Liverpool, sent as a New Year's token to their rubber manufacturing friends, a very handsome little pocket diary, enclosed in a leather case, containing various compartments for tickets, stamps, etc. The book, which can be removed from the covers for the insertion of a new one at the end of the year, contains in addition to a diary for 1912, a great deal of valuable statistical matter, especially covering "Loss in Washing" tables as follows:

"Loss in Washing" table. Equivalents of English s. d. per lb.; in cents per lb.; in francs per kilo; in marks per kilo.

English weights table in kilos; total Pará receipts and values; total Antwerp receipts and values; and monthly Pará receipts and values.

Naturally, they have had a great demand for this little book, and have been obliged to confine its distribution solely to their friends in the rubber manufacturing trade.

John Royle & Sons, manufacturers of rubber tubing machines, insulating machines, and other machinery, Paterson, New Jersey, have distributed to their customers a neat little leather bound pocket diary for 1912, including many pages of valuable statistical matter, covering weights and measures, percentage tables, rate of income and stocks, population of the principal cities of the United States, rates of domestic postage, and other similar matter. A very convenient little book.

J. W. Coulston & Co., importers and manufacturers of dry paints and colors, 136 Liberty street, New York, have distributed to users of their products, a small desk memorandum pad, each page covering one week. Alternating pages give much information regarding the products and importations of this concern.

The Adamson Mfg. Co., makers of rubber working machinery, Akron, Ohio, have favored their customers with a handsome wall calendar, 12 x 15 inches, the upper half of which shows a reproduction in color photography, of a painting by the well-known Scottish artist, H. J. Dobson. The title of the picture is "In the Days of Auld Lang Syne." It shows a humble Scottish kitchen with an old man playing the familiar tune on his ancient violin, while his wife sits by in rapt appreciation.

The Rubber Regenerating Co., Ltd., Manchester, England, has distributed to users of regenerated rubber a fine wall calendar 12 x 16. At the bottom of the calendar there is a pad with a page for each day. As the figures are 4 inches high, and are legible at a considerable distance, this calendar will be particularly serviceable in large offices. Above the pad there is a reproduction of a painting by Sanderson Wells of a hunting scene entitled "The Favorite Meet." With the huntsmen in their red coats, and the hounds alert for the trail, it makes a lively and attractive picture.

The Omo Mfg. Co., Middletown, Connecticut, is sending out its catalogue for 1912. It is a particularly handsome booklet 6 x 9 inches in size, printed in three colors, on heavy coated paper of superior quality, and has an attractive cover in gold, white and blue, deeply embossed. The catalogue which contains 52 pages, describes and illustrates on every page one of the great variety of dress shields made by this company. The Omo Company, by the way, has recently completed an addition to its plant, which more than doubles its former capacity.

The Iroquois Rubber Co., Buffalo, New York, is distributing to the trade a catalogue of 80 pages entitled "Mechanical Rubber Goods of Quality." It illustrates and describes rubber belting, rubber packing, valve disks, rubber hose, steam hose, and many other kinds—rubber tubing, perforated mats and corrugated matting, drain boards, and various other mechanical goods made of rubber.

The December number of "The Chemist-Analyst" comes to hand a few days late owing to the great number of new requests received by the publishers, J. T. Baker Chemical Co., Phillipsburg, New Jersey, for this little publication. It is now being sent to 10,000 people who are interested in chemical analysis.

THE UNITED STATES RUBBER CO.'S 1912 CATALOGUES.

THE UNITED STATES RUBBER CO. distributed, early in January, its catalogues for 1912. These catalogues consist of a very handsome series of 10 books of uniform size, 4¼ x 8½ inches, containing from 52 to 64 pages, and bound in very artistic covers. The 10 covers are all distinct and individual but uniformly fine in design and color effect. A catalogue is devoted to each of the following brands: American, Banigan, Boston, Candee, Glove, Lycoming, Malden, Meyer, Wales-Goodyear, and Woonsocket.

The inside of the catalogues is of the same quality of workmanship as the covers. The paper is heavy and of superior finish, the typography is most tasteful and the half-tone reproductions of rubber boots and shoes are exceptionally good. As they are made direct from photographs, with practically no retouching, they give an exact reproduction of the goods they represent.

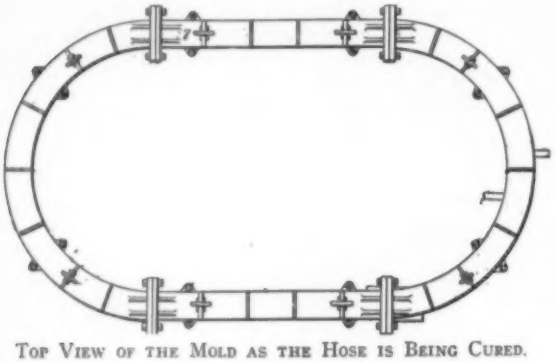
In addition to these 10 large catalogues, there are 2 small ones, also illustrated, one devoted to the "Empire" brand of rubber footwear and the other showing the miscellaneous footwear made by the company, including wool boots, lace felt boots, khaki boots and arctics, and showing also a new boot called the "Acido" boot, intended for workmen in acid works and powder factories where the boot naturally comes in contact with sulphuric acid.

The company follows the plan adopted last year of issuing these catalogues without prices, but with very full descriptions and illustrations, not with the intention of having them distributed to the retail trade, but simply for limited distribution among jobbers, to assist them in the preparation of their own individual catalogues. Further to assist the jobber in his catalogue work, the company is preparing, for immediate distribution, a new edition of its electrotype catalogue, which illustrates all the electrotypes which the company is prepared to furnish the jobbing trade for catalogue use.

A NEW HOSE MOLD.

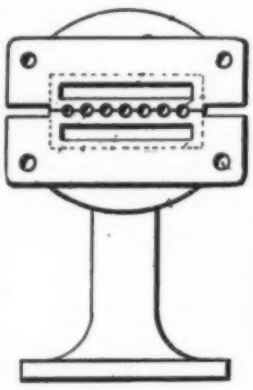
A MOLD for curing hose in lengths up to five hundred feet at a single operation has been recently designed and perfected by the Adamson Machine Company, of Akron, Ohio.

The new mold, which is the invention of a mold expert, has become the subject of considerable interest, especially among



TOP VIEW OF THE MOLD AS THE HOSE IS BEING CURED.

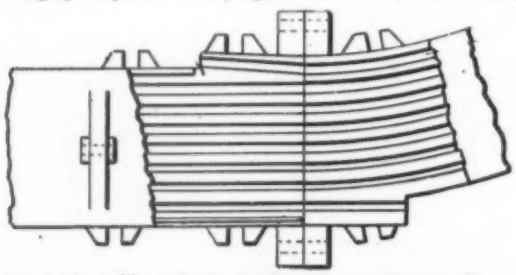
rubber manufacturers of the east, and many orders are in consequence being received; in fact, these molds have been installed by many of the biggest and busiest plants interested in mold work, and are regarded as standard in their line.



CROSS SECTION OF THE MOLD.

In addition to mold work the Adamson company are extensive manufacturers of many types of rubber-making machinery and devices, and its newly erected and equipped foundry and machine shop constitutes perhaps, size considered, one of the best appointed machine plants in the west, and the fact that it is generally taxed to its full capacity indicates the active request for Adamson products.

Mr. Alexander Adamson, the founder of this business, is one of the best-known machinists in the West and is one of Akron's most highly respected and progressive citizens, and he is gen-



SECTION OF THE MOLD SHOWING METHOD OF MAKING CONTINUOUS HOSE.

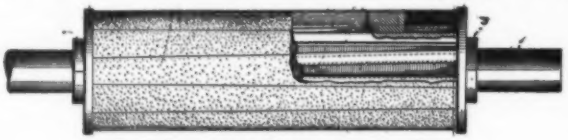
erally regarded in the trade as an expert in all matters pertaining to mold work. In this capacity he is called to rubber mills throughout the country.

The new plant, which was recently completed, was constructed with the sole idea of meeting the requirements of the various lines of mechanical work to which it is devoted, and the labor employed is of the most skilled and best class of mechanics to be obtained in that section.

A NEW SECTIONAL RUBBER SQUEEZE ROLL.

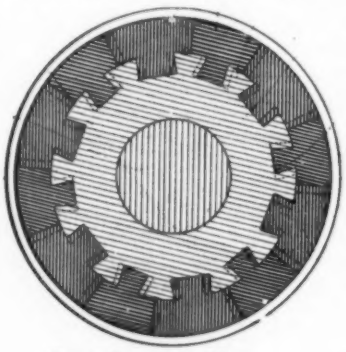
IN machines used for washing wool, rubber-covered rolls are used to squeeze the water from the cleansed material. These rolls are subjected to heavy pressure, and being turned constantly in one direction, the rubber has a tendency to crawl, and separate from the center or shaft, thus becoming practically useless for the work the rolls are intended to perform. There are other mechanical operations in which similar rolls are used, perhaps the most generally known being clothes-wringers for laundry or family use.

To overcome this difficulty on the part of the rubber cover, a metal sleeve is made with a series of longitudinal grooves, wider at the bottom than the top, and in section quite similar to carpenters' dovetails. These grooves are slightly tapering from one



I. F. BURNHAM RUBBER-COVERED ROLL.

end to the other, and fitting into them are sections of rubber, so made that when so fitted they form a cylindrical roll similar in shape to the ordinary rubber covered metal roll. These sections of rubber are tapered, so that they may be arranged alternately with their wider ends at opposite ends of the roll, and proper mechanical means are provided to hold them in place. This arrangement prevents the pressure of an opposing roll from acting upon the whole length of the joints, and obviates any tendency of the joints to open. In a roll thus constructed any one of the rubber strips or sections may be removed and another inserted without disturbing the others.



CROSS SECTIONAL VIEW.

A modification of the dovetail arrangement of fastening the rubber strips is the use of triangular or cylindrical bars, which fit in grooves in these rubber sections, these bars being adjusted and held in place by nuts by which the strips are compressed, so that the joints are firmly closed. It is obvious that such rolls are far more economical than the old-fashioned solid ones, because, in case of injury or undue wear, only a section needs replacement instead of an entire new roll being required. This roll is the invention of Ira F. Burnham, president of the Stoughton Rubber Co., Stoughton, Mass.

ANOTHER NEW USE FOR RUBBER.

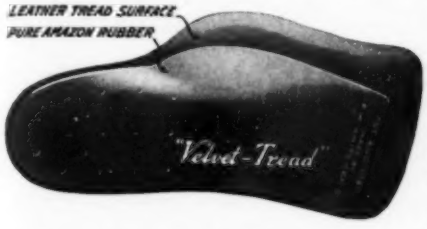
A prominent feature of the Whiteley dry goods palace recently opened in London, is the liberal use of glass for show cases and counters; wooden ones of the old-fashioned type being as far as possible avoided. In the lower part of these glass counters there is inserted an adjustible foot rest covered with rubber, which is intended to protect the counters from the feet of shoppers.

The B. F. Goodrich Co., of Akron, Ohio, has declared a 20 per cent. dividend on its $10,000,000 common stock, payable in preferred stock. This will increase the preferred stock to $6,000,000 outstanding.

New Rubber Goods in the Market.

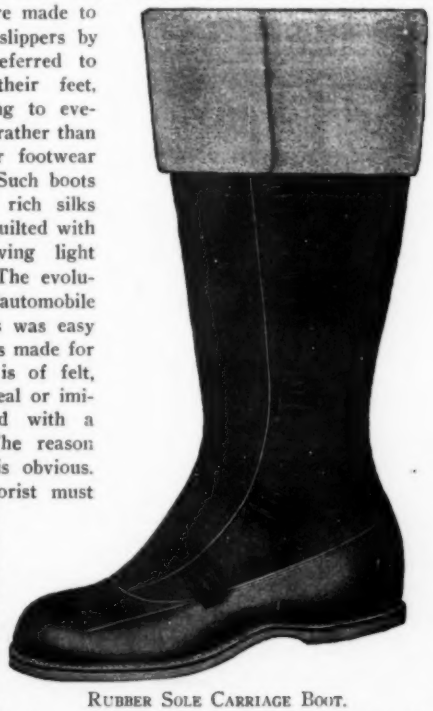
A RUBBER ARCH-SUPPORT.

AMONG the many ills which are all too prevalent today may be mentioned flat-foot, or the breaking down of the arch of the foot, a trouble which is relieved by the use of some mechanical appliance which raises the various bones of the foot into proper position, and supports them. Many and various are the arch-supports on the market for accomplishing this purpose. Most of them are of metal, but it remained for a Boston house to bring out one made of rubber. The Velvet Tread Non-Metallic Arch-Support and Foot Rest is formed of molded rubber of the required shape, perforated to secure proper ventilation, and having a sole leather tread, or cover, which protects the foot from contact with the rubber. This arch-support is claimed to be much lighter than those of metal, is very resilient, and acts on the cartilages and muscles steadily step by step, the rubber gradually and easily forcing the parts into their natural position. [The Frank W. Whitcher Co., Boston, Massachusetts.]



A NEW AUTOMOBILE BOOT.

AUTOMOBILING has brought about many changes and novelties in costume and apparel. One noticeable fact is the wider vogue of the carriage boot, which was formerly in limited demand. Such boots were made to be worn over slippers by ladies who preferred to thus protect their feet, while proceeding to evening functions, rather than to change their footwear after arriving. Such boots were made of rich silks and brocades, quilted with wool, and having light leather soles. The evolution of the "automobile boot" from this was easy and natural. As made for men's wear it is of felt, trimmed with real or imitation fur, and with a rubber sole. The reason for the latter is obvious. When the motorist must crank his own machine, the felt boot keeps his feet warm, and the rubber soles protect him from the dampness of the street. The boot shown herewith is of fine felt, with "firfelt" trimming (the latter keeping its freshness better than fur), and a moderately thick rubber sole. The extensive advertising of this line of boots has resulted in a widespread demand, and an order was recently received for a pair for the Crown Prince of Germany. [The Worcester Slipper Co., Worcester, Massachusetts.]



RUBBER SOLE CARRIAGE BOOT.

RECEIVERS FOR WIRELESS OPERATORS.

TELEPHONE receivers for wireless operators should have these three qualities in an eminent degree—first, sensitiveness; second, perfect comfort for the operator; and third, permanence of adjustment and construction. The "H-C" wireless operator's receiver is said to possess these three qualities. The windings are all made with silk-covered copper wire. The spools and magnets are mounted in a metal cup and this metal cup is enclosed in a hard rubber shell. A large pneumatic rubber cushion fits over the portion of the receiver which comes in contact with the ear and is much softer and more comfortable than the hard rubber shell, and shuts out all external noises. [The Holtzer-Cabot Electric Co., Brookline, Massachusetts.]

THE "H-C" WIRELESS RECEIVER.

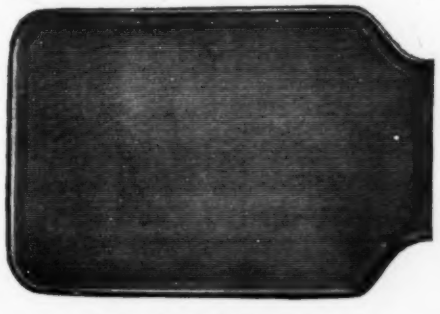
A GOLF CLUB WITH RUBBER FACING.

THE facing on driver or brassie undoubtedly has quite a little to do with the effectiveness of the stick. The Samson facing, which is an English device and is used on various golf clubs, appears to have given excellent results, as several successful competitors in championship contests claim longer drives as a result of its use. It is not affected by the wet, when fitted will not alter the balance of the club; and the player is said to get a better grip on the ball and to be able to drive straighter and farther. [The Samson Golf Syndicate, Limited, London. St. Mungo Manufacturing Co. of America, New York representative.]

A NEW DRAINBOARD MAT.

Something new in the line of plumbers' rubber goods is the "Meruco" drainboard mat.

It is molded of white pliable rubber with a raised rim on three sides, which protects china from slipping off, or chipping on the edge of the drainboard.



THE "MERUCO" DRAINBOARD.

Corrugations run lengthwise on both sides to drain off the water, and from an air chamber under the mat. Having no perforations, it can easily be cleaned with an ordinary brush. [The Mechanical Rubber Co., Cleveland, Ohio.]

SOMETHING NEW IN NIPPLES.

THE unusual feature of this nipple is the position of the orifice in the side of the lobe, and this position is marked by a white spot of rubber cemented at the base. The theory, which works out in praction, is the fact that by turning this outlet to the roof of the mouth, it checks the flow of milk, and makes possible slow feeding from a nursing bottle. In every other way the nipple is the same as the ordinary nipple of trade. There are no corrugations or other devices to prevent collapsing, but the position of the hole practically makes this nipple non-collapsible. [Thermolac Manufacturing Co., No. 6 Beacon street, Boston, Massachusetts.]

THERMOLAC NIPPLE.

WATERPROOFING ROBE AND MOCCASINS.

THE new Gordon foot robe is a great boon to the man who drives a motor car in cold, wet or even cool weather. The robes are water and wind proof, and so made that the sides can be drawn under the limbs and fastened, forming a loose trouser robe. Attached to the bottom of the robe is a pair of leather-soled moccasins, lined with soft plush. The feet can be easily shifted in or out as desired, but when inside there is perfect freedom to operate the pedals. [The Vehicle Apron and Hood Company, Columbus, Ohio.]

AN ELASTIC STOCKING THAT KEEPS ITS SHAPE.

The illustration shows an elastic stocking used for varicose veins, enlarged joints, etc., which pulls on like a boot, and does not, even after much use, lose its shape or elasticity. This is accomplished partly by using a good rubber thread and partly because along the sides of the stocking are sewed non-elastic stays and loops. These do not add appreciably to the weight, nor are they noticeable, but they prolong the life of the stocking wonderfully. These stockings are made of three kinds of materials—heavy silk, fine silk or cotton elastic. [Pomeroy Company, New York.]

THE "MASTER" ELASTIC STOCKING.

At the automobile show at Madison Square Garden there were 84 cars equipped with the Goodyear Tire and Rubber Co.'s tires.

A RUBBER BANDAGE THAT ADMITS THE AIR.

THOSE who are so unfortunate as to be obliged to wear an elastic bandage know by practical experience the discomfort which it produces because it is so nearly air-proof that it induces perspiration. A new elastic bandage is being placed upon the market which is entirely free from this objection, by the Boston Gore and Web Co. It differs from the ordinary elastic bandage in two important particulars. It is of a novel and peculiar weave which makes it nearly as open as mosquito netting, thus allowing for thorough ventilation while being worn, and it is made with heavier rubber threads than the standard goods of this kind. The makers, who have taken out a patent on this bandage, claim that it is made of specially prepared, soft mercerized yarn, and is put up in a germ-proof and attractive package. [Boston Gore and Web Co., Boston, Massachusetts.]

THE BOSTON GORE AND WEB CO. BANDAGE.

AUTOMOBILES ON CREDIT.

IN our September issue we mentioned the fact that Fred E. McEwen had formed a company known as the Auto Credit Company, Inc., for the purpose of selling automobiles on a credit basis, the purchaser selecting his car, paying one-half cash and the balance in monthly payments. The Studebaker has now adopted a similar plan. General Manager of the Company Walter E. Flanders says: "I believe the automobile business should be placed on a credit basis, and I think it will prove to be the most important advance that has been made in the automobile industry since its inception.

"There is many a responsible business man and farmer who is eminently able to own an automobile and who yet hesitates to take so much cash out of the reserve on the instant. Then again we find that frugal persons frequently resort to the expedient of paying the ready cash they can afford for an unreliable second-hand or a poorly constructed new car, when by the credit plan they would select a first-class, full-sized automobile, paying part cash and taking time for the balance."

Just how this innovation will affect the profits of automobile manufacturers cannot be prognosticated, but that it will very considerably increase sales goes without saying. Whether the makers of tires will be called upon to share in any of the risks that naturally, to a certain extent at least, accompany business on a credit basis, has not been stated.

THE EXPORTS AND IMPORTS OF AEROPLANES.

To people who have given no thought to the subject of aeroplanes, the information recently collated by the Bureau of Statistics, Department of Commerce and Labor, showing the extent of international commerce in these new articles, will be quite a revelation. These statistics show that more than $50,000 worth of aeroplanes were imported into, and exported from the United States in the months of July, August and September of the current year. The Bureau of Statistics only began keeping a separate record of this new article of commerce with the opening of the current fiscal year. In the three months for which a record is now available five aeroplanes were exported, all going to Canada, with a total value of $18,450, or an average valuation of $3,690 each. On the import side no transactions are given for the month of July, but in the month of August two aeroplanes were imported from France, their combined value being stated as $15,091. In September the number imported was five valued at $22,752, one being from England, valued at $4,700 and five from France, valued at $18,052, making the total importations of the three months in question eight aeroplanes, valued at $37,843, or an average valuation of $4,730 each.

News of the American Rubber Trade.

THE MEETING OF THE AMERICAN RUBBER CHEMISTS.

THE 45th meeting of the American Chemical Society was held in Washington, District of Columbia, December 27 to 30. The meeting was the most successful in the history of the society, there being over 650 members registered.

The rubber section also had one of its most successful meetings, there being over 50 members present at the first session. The following papers were read:

"Scientific Tests and Methods for Rubber Contents in Raw and Vulcanized Rubber," by Dr. Ducca; "The Treatment of Crude Rubber," by Francis R. Peabody; "Rubber Goods Required in Beet Sugar Factories," by Victor Hanslick; "Does the Acidity of Rubber Indicate its Botanical Origin?" by L. J. Plumb. Mr. Harry P. Mills, of Torreon, Mexico, sent a paper descriptive of a punching machine for rubber samples, but this was not read, having been received too late.

Besides the discussion of these papers, there was a lengthy discussion on the subject of synthetic rubber. The following subjects were also taken up and discussed: The formation of the rubber molecule, the effects of oils and other adulterants in reclaimed rubber, the use of sublimed white lead in rubber compounds and its exclusion from such compounds by certain specifications.

At the business meeting of the section, held on December 30, a complete reorganization took place, the manufacturing interests taking an active part in the reorganization. Mr. D. A. Cutler, of the Rubber Goods Manufacturing Company, was elected chairman, Mr. D. Whipple, of the Safety Insulated Wire & Cable Company, was elected secretary, and these two gentlemen, together with Messrs. Geer, of the Goodrich Company; Boggs, of the Simplex Electrical Company; and Fay, of the Boston Woven Hose & Rubber Company, were elected the Executive Committee for the ensuing year. The Executive Committee was empowered to appoint a new committee on standard methods of analysis, and such other committees as it might deem fit.

Messrs. Cutler and Geer announced that all the money necessary to carry on the work of the committee on methods of analysis would be forthcoming. Mr. Geer announced also that his company would be pleased to detail three of its chemists to carry on the work of the committee, and also to furnish the necessary room for them to work in. Offers along the same line were made by other manufacturers present.

OFFICERS OF THE SOUTHLAND RUBBER CO.

AT the last annual meeting of the Southland Rubber Co., a corporation with a plantation in the department of Palenque, State of Chiapas, Mexico, but whose corporate home is in Spokane, Washington, the following officers were elected: Dr. George K. McDowell, president; J. W. Oakes, vice-president; Charles E. Brown, secretary; James W. Boothe, treasurer. The officers and J. B. Rogers, Dr. Harry S. Martin and E. B. Bird comprise the board of directors.

RUBBER AND CELLULOID HARNESS TRIMMING CO.—ANNUAL.

AT the annual meeting of the Rubber and Celluloid Harness Trimming Co., Newark, New Jersey, held on January 9, directors were elected as follows: Andrew Albright, Jr., E. A. Spurr, Mathew Dunlap, David Lockwood, Thomas Kays and Edward G. Robertson. The company reports a prosperous year's business. Officers were elected by the board as follows:

President—ANDREW ALBRIGHT, JR.
Vice-President—E. A. SPURR.
Secretary—THOMAS KAYS.
Treasurer—EDWARD G. ROBERTSON.

SHAWMUT TIRE CO. OF NEW YORK.

There has been such a demand for Shawmut tires that it has been thought best to organize a company to be devoted exclusively to the manufacture of these goods. The name of the company is the Shawmut Tire Co. of New York, and the warerooms will continue to be located at 256 West Fifty-fifth street, New York. The officers of the company are as follows:

President—W. G. PAGE.
Treasurer and Secretary—C. C. MARSTON.
Sales Manager—J. E. LANCASTER.

THE IMPERIAL-GORDON RUBBER CO.

The Imperial-Gordon Rubber Co., which is a reorganization of the Imperial Rubber Manufacturing Co., Canton, Ohio, has the following officers:

President—C. W. KEPLINGER.
Vice-President and Manager—A. E. GORDON.
Secretary and Treasurer—C. J. KEPLINGER.
Factory Manager—E. S. CURRENT.

MASSACHUSETTS AUTOMOBILE CLUB.

At the annual meeting of the Massachusetts Automobile Club, Boston, Massachusetts, held January 13, the following officers were elected:

President—FRANK E. PEABODY.
First Vice-President—WILLIAM H. AMES.
Second Vice-President—CHARLES J. SHRINER.
Secretary—WILLIAM A. ROLFE.
Treasurer—GEORGE R. ALLEY.

HODGMAN RUBBER CO.—ANNUAL ELECTION.

AT the annual meeting of the Hodgman Rubber Co. (New York), held under date of January 18, 1912, the following officers were re-elected:

President—G. B. HODGMAN.
Vice-President—F. A. HODGMAN.
Treasurer—S. T. HODGMAN.
Secretary—A. W. WARREN.

THE MILLER RUBBER CO. INCREASES ITS STOCK.

At a special meeting of the stockholders of the Miller Rubber Co., of Akron, Ohio, held in December, it was voted by them to increase the capital stock of the company from $500,000 to $1,000,000, and the directors were authorized to offer for sale to present stockholders, $200,000 of the new stock at par, which would entitle each one to purchase 40 per cent. of their present holdings. It was also decided to have the new issue paid for as follows: One-eighth on February 1, 1912, and an eighth every sixty days thereafter, up to and includng April 1, 1913. One-half of the new stock will be issued on the first day of August, 1912, to such stockholders as have paid for it according to their subscriptions; and the remaining one-half will be issued on the first day of April, 1913, to such stockholders as have at that time fully paid the amount of their subscriptions.

In the event that any of the stockholders wish to pay for any or all of the stock in advance, the company will allow them interest at 6 per cent. up to the time of the maturity of each instalment. The directors of the company believe that the company can continue to pay its present rate of dividend on its increased capital.

There have recently been made at the Morgan & Wright factory, Detroit, a limited number of sample tires for test purposes of a size 8 x 38, which are the largest pneumatic tires ever made. Four of these tires have been used on a Morgan & Wright truck, with satisfactory results. A single tire weighs 115 pounds, the inner tube weighing 15 and the shoe 100 pounds.

TRADE NEWS NOTES.

Hon. L. D. Apsley, president of the Apsley Rubber Co., Hudson, Massachusetts, has among his possessions a pair of child's croquets, which were part of the first lot made by that company, being the first pair removed from the first vulcanizer of footwear. They bear the "Middlesex" brand, this company's seconds; yet after the lapse of a dozen or fifteen years they are still elastic and resilient.

Two very large Western manufacturers of shoes, who also have been large jobbers of rubber footwear, The Peters Shoe Co. and Roberts, Johnson & Rand Shoe Co., have consolidated under the name of the International Shoe Co., and incorporated with an authorized capital of $25,000,000.

L. A. Halley, formerly with the Consolidated Tire Company, has assumed the management of the Chicago branch of the Motz Tire & Rubber Company.

The paragraph that has been floating around the press of the country to the effect that The B. F. Goodrich Co., Akron, Ohio, intended to open a branch factory in Spokane, Washington, is an error, as the company has no intention of building a factory at that point. The paragraph evidently arose from the fact that the company is planning to open a service depot at Spokane, which is quite a different matter.

The Staunton Dielectric Rubber Co., Muskegon, Michigan, announces a change of name. Because of a possible confusion in names, the company will hereafter be known as the Vulcanized Products Co., and its dielectric material called Dielectrite, will be renamed *Gohmak*.

R. R. Drake, of the United States Tire Co., estimates that since the beginning of 1907 the tire makers of America have marketed in the neighborhood of 8,000,000 pneumatic tires, the yearly output, according to his figures, being as follows: 1907, 900,000; 1908, 1,050,000; 1909, 1,350,000; 1910, 1,800,000; 1911, 2,900,000; total, 8,000,000. His estimate for 1912 is 4,000,000 tires.

A new rubber company called the Sanitary Reversible Syringe Co. has been formed in Memphis, Tennessee, and intends soon to establish a factory in that city for the purpose of manufacturing sanitary reversible syringes, and probably other rubber goods. The sanitary reversible syringe is one that can be turned wrong side out, like a stocking, and used either way equally well.

AN EXCELLENT HOSE REEL.

THE hose reel known as Wirt's W. & K. No. 2, made by the Wirt & Knox Manufacturing Co., of Philadelphia, is an exceptionally complete and convenient affair. It is light, weighing only 15 pounds when packed for shipment, and it is exceedingly strong, as it is made entirely of metal, the frame being constructed of the best tubular steel, the wheels of cast iron, the drum of galvanized iron, and the drum arms of solid steel. The drum, as will be noticed from the cut, is corrugated. This enables the air to get under the hose when reeled and prevents mildewing. The drum being 9 inches in diameter also prevents the hose from being too tightly wound. The cut also shows the little catch towards the top of the frame, which can be adjusted at any height; this holds the nozzle when the hose is in use and is a very convenient device. The reel is quite handsome in appearance, with enameled green frame, galvanized drum and black wheels. It holds 100 feet of ¾-inch hose.

WIRT'S W. & K. NO. 2 HOSE REEL.

UNITED STATES RUBBER CO.'S ISSUES.

TRANSACTIONS on the New York Stock Exchange for five weeks, ending January 27:

COMMON STOCK, $25,000,000.

[The treasury of a subsidiary company holds $1,334,000.]

Last Dividend, January 31, 1912—1%.

Week	December 30	Sales	4,700 shares	High 48	Low 47
Week	January 6	Sales	7,100 shares	High 49	Low 47¾
Week	January 13	Sales	3,500 shares	High 48⅞	Low 47½
Week	January 20	Sales	600 shares	High 47¼	Low 46¼
Week	January 27	Sales	900 shares	High 47	Low 46⅝

For the year—High, 49, January 3; Low, 46¼, January 16.
Last year—High, 48½; Low, 30½.

FIRST PREFERRED STOCK, $39,824,400.

Last Dividend, January 31, 1912—2%.

Week	December 30	Sales	300 shares	High 110⅞	Low 110⅛
Week	January 6	Sales	300 shares	High 110¼	Low 110¼
Week	January 13	Sales	1,375 shares	High 111	Low 110¾
Week	January 20	Sales	700 shares	High 111	Low 109¾
Week	January 27	Sales	100 shares	High 110¼	Low 110¼

For the year—High, 111, January 11; Low, 109¾, January 19.
Last year—High, 115½; Low, 104.

SECOND PREFERRED STOCK, $9,965,000.

Last Dividend, January 31, 1912—1½%.

Week	December 30	Sales	300 shares	High 75⅞	Low 75
Week	January 6	Sales	200 shares	High 76	Low 76
Week	January 13	Sales	100 shares	High 76⅛	Low 76⅛
Week	January 20	Sales	... shares	High ..	Low ..
Week	January 27	Sales	300 shares	High 75½	Low 75

For the year—High, 76⅛, January 8; Low, 75, January 23.
Last year—High, 79; Low, 66.

SIX PER CENT. TRUST GOLD BONDS, $19,000,000.

Outstanding of the 1908 issue of $20,000,000.

Week	December 30	Sales	27 bonds	High 104⅜	Low 104¼
Week	January 6	Sales	55 bonds	High 104⅜	Low 103¾
Week	January 13	Sales	47 bonds	High 104⅜	Low 104
Week	January 20	Sales	33 bonds	High 104⅛	Low 103⅞
Week	January 27	Sales	109 bonds	High 104¾	Low 104⅛

For the year—High, 104¾, January 27; Low, 103¾, January 6.
Last year—High, 105; Low, 101¾.

COMMON STOCK.

	1906.	1907.	1908.	1909.	1910.	1911.
Shares sold..	607,800	175,277	191,200	517,411	239,666	485,157
Highest price.	59¾	52⅛	37½	57⅞	52½	48¼
Lowest price.	38	13½	17½	27	27	30¼

Highest 1911, Dec. 16; lowest, Sept. 25; closing, 47¾.

FIRST PREFERRED STOCK.

	1906.	1907.	1908.	1909.	1910.	1911.
Shares sold..	123,760	120,108	94,400	199,512	91,849	46,327
Highest price.	115	109⅞	108	123½	116½	115⅝
Lowest price.	104¾	61⅛	76	98	99	104

Highest 1911, July 7; lowest, Sept. 25; closing, 110¾.

SECOND PREFERRED STOCK.

	1906.	1907.	1908.	1909.	1910.	1911.
Shares sold..	59,845	31,203	21,131	61,790	19,406	23,510
Highest price.	87½	78⅛	75½	89½	84	79
Lowest price.	75	39	42	67½	59½	66

Highest 1911, Mar. 1; lowest, Sept 26; closing, 75.

SIX PER CENT. TRUST GOLD BONDS.

	1910.	1911.
Bonds sold	3,631	2,437,000
Highest price	104½	105
Lowest price	101¾	101¾

Highest 1911, April 28; lowest, Sept. 26; closing, 104½.

THE board of directors of the United States Rubber Company on January 4 declared from its net profits a quarterly dividend of 2 per cent. on the first preferred stock (including all outstanding old "preferred" stock), a quarterly dividend of 1½ per cent. on the second preferred stock, and a quarterly dividend of 1 per cent. on the common stock of the company to stockholders of record at 3 p. m. on Monday, January 15, 1912, payable without closing of the transfer books, January 31, 1912.

Alfred C. Eggers and Ludwig T. Eggers, composing the firm of Eggers Bros. & Co., announce the closing of a co-partnership with William S. Pounds. The business will hereafter be conducted under the firm name of Egger Bros. & Pounds, importers and brokers of crude rubber, gutta-percha and balata, at 16 Exchange place, New York.

COLONEL COLT REGAINS CONTROL.

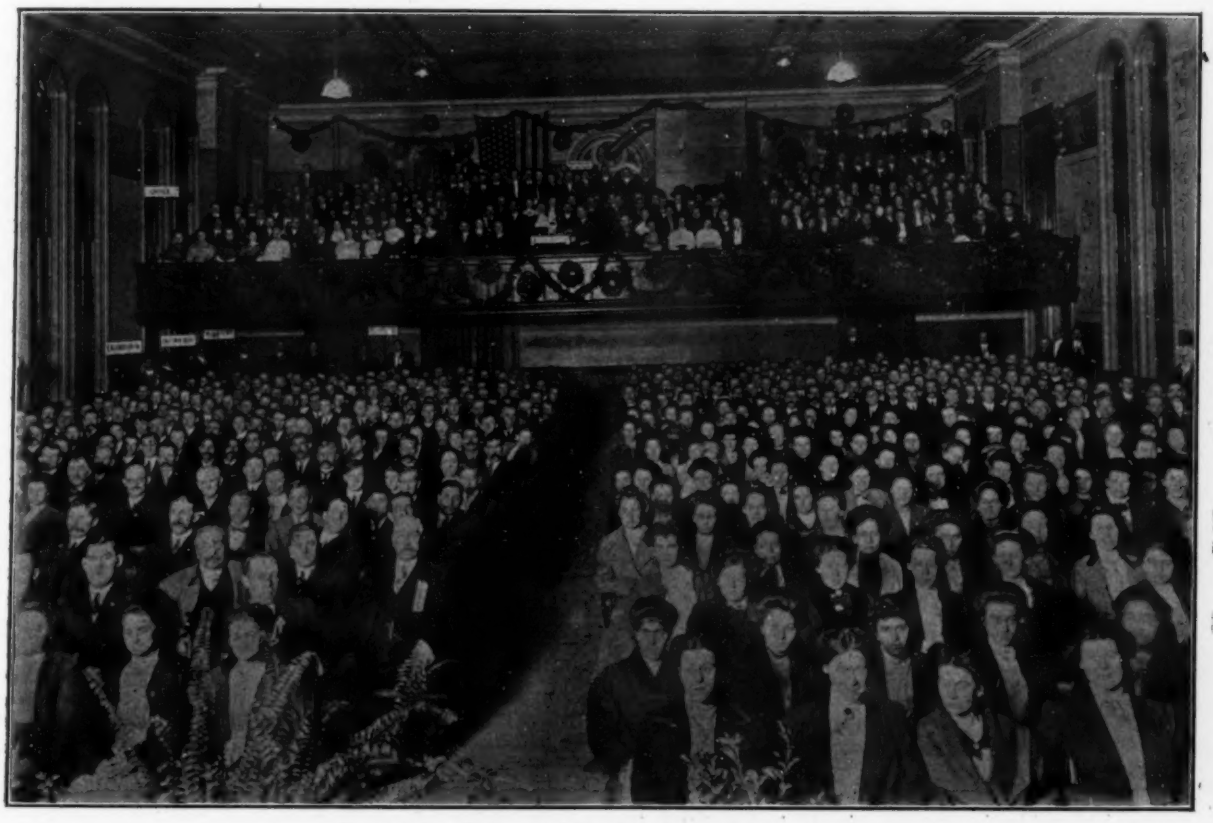
Colonel S. P. Colt, president of the United States Rubber Company, has regained control of the Industrial Trust Company of Providence, Rhode Island, after one of the warmest contests ever waged in the financial affairs of that State. The annual meeting of the stockholders, which took place January 16, lasted from noon until after 6 in the evening, and was attended by the largest gathering in the history of the institution, more than 150 persons being present. H. Martin Brown, Colonel Colt's candidate, won by a large margin, as did the list of officers nominated by the Colt faction. The actual number of shares voted was 26,934, of which H. Martin Brown had 15,426 and C. P. Brown 11,255.

MR. APSLEY ENTERTAINS HIS EMPLOYES.

In these days when so much is being said about the benefits which accrue both to the emloyer and to the employe from the employer's active interest in the welfare, physical, mental and moral, of his employes, it is interesting to chronicle anything done in this line by members of the rubber trade.

The Hon. L. D. Apsley, president of the Apsley Rubber Co., Hudson, Massachusetts, has always shown a lively interest in the operatives of his big mill, and during the recent holiday season, following his general policy, he invited the 900 people employed in his rubber mill to a triple entertainment, given in the town hall of Hudson. In fact, it was a quadruple entertainment, beginning with a fine band concert, which began early in the evening, followed by an entertaining travel lecture, with moving pictures describing and illustrating interesting scenes in European countries. This continued until 9 o'clock, and then the entire 900 guests sat down to a substantial banquet, prepared by the proprietor of one of the Hudson hotels, and after this the time was given over to dancing until a late hour. It is quite an undertaking to provide so elaborate an entertainment for such a large number, but there is no doubt that it is distinctly worth while, as it tends to create a friendly feeling on the part of the employe toward the employer, which greatly facilitates the work of the factory. At the beginning of the evening Mr. Apsley delivered a short address to the company, part of which is here appended.

"As president of the Apsley Rubber Company, it is my pleasure to extend to you the season's greetings, and to wish you, one and all, a most enjoyable time tonight, and prosperity for the coming year. I take this occasion to thank you all for your faithful service. I am a great believer in co-operation; and I believe that those who try to do their duty as best they can, get the most out of life and reap the greatest reward; so I am going to ask you, as you have done in the past, to be loyal to the company; to try to perform your duties with a smile, so far as possible; and to put an extra push or *roll* into your work, and to see that the product of this factory is made right. By so doing you will benefit the whole people; and you, individually, will reap direct reward, because, if your work is well done, it means that this factory will run more hours, and that you will have more steady work, which means prosperity for the whole town and your employers."



THE APSLEY EMPLOYES LISTENING TO ILLUSTRATED LECTURE.

AN ARTISTIC PAPER WEIGHT.

The Arkay Rubber Company, of New York, has favored its customers with a very pretty paper weight, having a brass standard measuring about 2 by 3½ inches, on top of which is mounted a metal reproduction of the company's trade mark. It is just the right size and weight for a paper weight, and is an ornament to any desk.

NEW INCORPORATIONS.

Acme Automatic Tire Pump Co., November 15, 1911; under the laws of Ohio; authorized capital, $50,000. Incorporators: Francis J. Carroll, Francis J. Houlihan, and Emil R. Rosenthal. To manufacture and deal in automatic pumps, automobiles, automobile accessories and supplies.

The Aetna Rubber Co., November 24, 1911, under the laws of Ohio; authorized capital, $20,000. Incorporators: H. E. Johnson, C. M. McEachren and R. C. Ellis. Location of principal office, Cleveland, Ohio. To manufacture all kinds of articles, substances, etc., of which rubber is a component part.

Airease Tire Filler Co., January 6, 1912, under the laws of Delaware; authorized capital, $100,000. Incorporators: W. F. P. Lofland, W. I. N. Lofland and John S. Collins, Jr., all of Dover, Delaware. To deal in automobiles, motor cycles, tires and tire fillers.

Amerital Manufacturing Co., January 16, 1912, under the laws of New York; authorized capital, $200,000. Incorporators: William O. Turrell, 720 West One Hundred and Eighty-first street; Salvador Seognamillo, 209 East One Hundred and Sixteenth street, and Lester W. Schwartz, 100 Morningside avenue, all of New York. Location of principal office, New York. To manufacture auto wheels, tires, etc.

The L. M. Anderson Co., January 3, 1912, under the laws of New Jersey; authorized capital, $60,000. Incorporators: Ernest O. Machlin, Arthur J. Anderson and Howard A. Lee, all of Trenton, N. J. To buy, produce, sell, trade and deal in any and all kinds of crude, refined and manufacturing rubber, etc.

The Boonton Rubber Manufacturing Co., December 13, 1911, under the laws of New Jersey; authorized capital, $300,000. Incorporators: Richard P. Messiter, Frederick Gordon, and Edwin A. Fisher, all of Boonton, New Jersey. To manufacture and sell goods, wares, etc., of any sort or description, of which rubber or Bakelite is a component part.

Burgess Patent Tire and Manufacturing Co., December 21, 1911. under the laws of Missouri; authorized capital, $300,000. Incorporators: John W. Burgess, George F. Burgess and D. T. Smith, all of Brookfield, Missouri. Location of principal office, Brookfield, Missouri. To manufacture, buy, sell and deal in and with auto tires, etc.

Carroll Tire Co., November 25, 1911, under the laws of New York; authorized capital, $20,000. Incorporators: John Gregson, Geo. Cunliffe and J. Edward Gregson, all of Buffalo, New York. Location of principal office, Buffalo, New York. To manufacture rubber tires.

The Chemical Rubber Co., December 29, 1911, under the laws of Illinois; authorized capital, $150,000. Incorporators: J. J. Lamkey, J. C. Evans, and Frank P. Hatter. Location of principal office, 332 S. Michigan avenue, Chicago, Illinois. To manufacture and deal in chemicals, chemical rubber, etc.

The Cincinnati Garter Co., December 4, 1911, under the laws of Ohio; authorized capital, $50,000. Incorporators: Clarence E. Schaffner, Walter P. Dolle and L. B. Folger. To manufacture and sell garters, suspenders, belts and similar articles.

Congo Tire and Rubber Co., December 18, 1911, under the laws of New York; authorized capital, $1,000. Incorporators: Karl V. Roosa, 277 Broadway; David Morris, 26 Oliver street, and Abraham Levy, 277 Broadway, all of New York. Location of principal office, Manhattan.

Copeland Casterline Co., December 30, 1911, under the laws of New York; authorized capital, $10,000. Incorporators: John N. Copeland, Chauncey H. Casterline, and Vola F. Copeland, all of Hornell, New York. Location of principal office, Jamestown. To manufacture rubber goods, etc.

The Crown Raincoat Co., December 23, 1911, under the laws of Ohio; authorized capital, $25,000. Incorporators: F. M. Keyser, L. M. Keyser and P. C. Rose. Location of principal office, Columbus, Ohio. To deal in waterproof clothing at wholesale and retail.

The Electric Rubber Reclaiming Co., December 8, 1911, under the laws of Ohio; authorized capital, $200,000. Incorporators: John C. Frank, Frank E. Ream and D. F. Felmly. Location of principal office, Akron, Ohio. Object, reclaiming vulcanized rubber, etc.

Fort Dearborn Rubber Goods Co., January 10, 1912, under the laws of Illinois; authorized capital, $5,000. Incorporators: Charles E. Kirkwood, John F. Rau and D. G. Ramsay. To manufacture and deal in rubber and rubber goods.

The Imperial Gordon Rubber Co., December 13, 1911, under the laws of Ohio; authorized capital, $300,000. Incorporators: C. W. Keplinger, Chas. J. Loichat and A. V. Hug. To manufacture, sell and buy rubber and rubber products, and articles made, or compounded wholly or partially of rubber.

The International Pneumatic Wheel Co., January 9, 1912, under the laws of Indiana; authorized capital, $100,000. Incorporators: Walter S. Johnson, W. H. Alford and Fletcher Johnson. To buy, sell, deal in and manufacture pneumatic wheels, machinery, etc.

The International Shoe Co., December 27, 1911, under the laws of Missouri; authorized capital, $25,000,000. Incorporators: Jackson Johnson, John C. Roberts and Frank C. Rand, all of St. Louis, Missouri. To engage generally in the boot and shoe manufacturing business and to manufacture all articles in whole or in part from rubber, etc.

Nashville Rubber Hat Protector Co., December 28, 1911, under the laws of Tennessee; authorized capital, $25,000. Incorporators: Norman E. Harris, R. E. Donnell and Oury Harris, all of Nashville, Tennessee. To buy, sell and deal in a useful novelty for the covering or protection of hats.

Palm Gum Tire Seal Co., December 14, 1911, under the laws of Illinois; authorized capital, $1,500. Incorporators: William Swords, Jr., Harry H. Du Chesne, and William Turnbull. To manufacture compounds and compositions for the purpose of sealing holes in inflated rubber tires.

Peckham Sanitary Rubber Co., December 21, 1911, under the laws of New York; authorized capital, $5,000. Incorporators: Frederick A. Stroh, 400 East One Hundred and Thirty-ninth street, New York; Anna V. Kinealy, Brooklyn, New York. Location of principal office, Manhattan. To manufacture rubber goods.

Regal Rubber Co., December 22, 1911, under the laws of New York; authorized capital, $5,000. Incorporators: Berel Tolk, 187 Henry street; David Tolk, 334 Grand street, and Abraham Samilson, 236 Madiscn street, all of New York. Location of principal office, Brooklyn. To manufacture rubber goods.

Roller Polisher Co., December 22, 1911, under the laws of Maine; authorized capital, $100,000. Incorporators: Henry Mitchell, C. F. Smothers, both of Kittery, Maine. To buy, sell, improve, deal in, etc., rubber and various other chemicals and compositions.

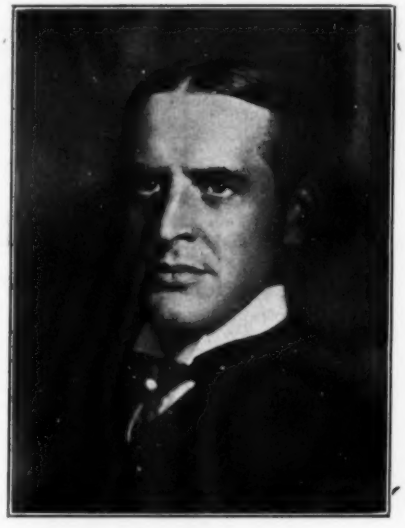
Shawmut Tire Company of New York, Inc., January 16, 1912, under the laws of New York; authorized capital, $5,000. Incorporators: Clarence C. Marston, South Weymouth, Massachusetts; Wallace G. Page, Brookline, Massachusetts, and Alexander S. Campbell, 54 Wall street, New York. To deal in rubber tires. Location of principal office, New York.

Victoria Waterproof Co., December 30, 1911, under the laws of New York; authorized capital, $20,000. Incorporators: Joseph Dube, Meyer Reingold and Frida Dube, all of Brooklyn, New York. Location of principal office, Manhattan. To manufacture rubberized coats, etc.

A number of business men of Sacramento, California, who are stockholders in the Roblito Rubber Plantation Co., situated in southern Mexico, are making a tour of inspection of this property, devoting several weeks to the trip.

MARCUS ALLEN WITH THE FEDERAL RUBBER MANUFACTURING CO.

THE Federal Rubber Manufacturing Co. of Milwaukee has announced the appointment of Marcus Allen as manager of its New York branch, with headquarters in New York City. Mr. Allen was formerly connected with the Empire Tire Co., and later took



MARCUS ALLEN.

the management of the New York branch of the G. & J. Tire Co. of Indianapolis. Inasmuch as former officials of the G. & J. Tire Co. are now at the head of the Federal company, Mr. Allen will be with his former business associates. Having a wide acquaintance in the pneumatic tier trade, and an enviable record, Mr. Allen should prove a marked success in his new position.

CALENDARS RECEIVED.

The Quaker City Rubber Company, Philadelphia, Pennsylvania, has issued a calendar, 12 by 20 inches in size, reproducing in colors a bird's-eye view of its plant at Wissinoming, Pennsylvania, and giving a brief list of its various products. The calendar itself is in the form of a pad, with one page allotted to each month, and printed in good-sized legible figures.

The American Wax Co., Boston, Massachusetts, has sent to its customers a large wall calendar 20 by 30 inches, which not only shows the days of the month, but indicates also the days of the year, which in many offices is an additional convenience.

The Lebanon Mill Co., manufacturers of knitted fabrics, Pawtucket, Rhode Island, have favored their customers with a particularly handsome wall calendar, reproducing, in large size, the painting entitled "Those Bewitching Eyes," by Harrison Fisher. The reproduction is made in the photo-color process by Brown & Bigelow. It is one of the finest of the 1912 calendars.

The Walpole Rubber Co., New York, has distributed a wall calendar with a scene emblematic of progress and prosperity. In the foreground is an allegorical female figure, clad in scarlet robes, indicative of peace and plenty. In the background are smoking mills, whirling railroads, ocean liners and aeroplanes.

James Boyd & Bro., Inc., manufacturers of fire protection equipment, belting hose, packing and valves, Philadelphia, issue to their customers a calendar diary in the form of a memorandum pad, with a page for each week. The size is 5½ x 8½ inches and it is a convenient addition to a desk. It is mounted on a cardboard, which contains a calendar for the entire year 1912 and the first six months of 1913.

PERSONAL MENTION.

John H. Pearce, who has, for a number of years, been superintendent of the L. Candee & Co. rubber factory at New Haven, Connecticut, has resigned to become general superintendent of the rubber footwear department of the Canadian Consolidated Rubber Co., Limited, of Montreal. George Schlosser, who has for many years been superintendent of the Woonsocket Rubber Co. mill, succeeds Mr. Pearce.

Robert S. Emerson, son of C. A. Emerson, purchasing agent of the United States Rubber Co., has been appointed by Judge Tanner permanent receiver of the Consumers' Rubber Co., of Bristol, Rhode Island.

J. M. Cummings, manager of the California branch of the Michelin Tire Co., has recently returned from an extended trip to the Hawaiian Islands, and states that there is an excellent field for high-grade cars in the islands, most of them being bought by planters and other prosperous residents. He states at the same time that there is very little market for second-hand cars, showing that the islands seem to lack what might be called the "middle-class" purchaser.

According to a statement in "The Montreal Star," D. Lorne McGibbon, president of the Canadian Consolidated Rubber Co., Limited, states that the business of that company for November last reached close to the million mark, which is the company's record for a single month.

Edgar B. Davis, vice-president and a director of the General Rubber Co., of New York City, left New York, January 24, on the White Star liner "Olympic," for a business trip of several months in the Far East. His headquarters will be at Singapore, and his work will take him to Sumatra, Japan and India. The trip will the fifth in the last five years.

Chester J. Pike, who is known to almost everyone in the footwear trade from his former connection, lasting for many years, with the United States Rubber Co., has resigned from the Congress Shoe and Rubber Co., Boston, to associate himself with A. W. Ellis Advertising Agency, of that city.

A. Staines Manders, organizing manager of the Rubber Exhibition to be held in September next in the Grand Central Palace, will arrive in New York about the middle of February, after a long tour through Europe. Mr. Manders has elicited the sympathy of all countries, and the success of the exposition in all departments is assured. Mr. Manders will be at the Grand Central Palace, 46th and 47th streets, Lexington avenue, daily, and will be pleased to see any one interested in the exposition.

TRADE NEWS NOTES.

The directors of Katzenbach & Bullock Co., Trenton, New Jersey, at their annual meeting declared the regular dividend of 6 per cent. on the preferred stock. Mr. Welling S. Katzenbach reported that the outlook for 1912 business was so favorable that it seemed advisable to increase the company's capital stock in order to have the necessary working capital to handle the increased volume of business. Accordingly at the special stockholders' meeting held January 19 it was voted to increase the capital to $50,000.

The New York section of the Society of Chemical Industry held an informal dinner at the Chemists' Club, No. 52 East Forty-first street, New York city, on the evening of January 19. After the dinner the Perkin medal was presented to Herman Frasch, and then a general discussion of the subject of Sulphur took place.

A Fairport, New York, motorist writes the Fisk Rubber Co., New York, that he has used the same set of their tires on a Marion touring car for five seasons without having a puncture or blowout, or taking a single tire off the rim.

SOME LATE STYLES OF RUBBER GARMENTS.

The four illustrations below give a good idea of some of the latest rubber garments that are being offered by the leading mail order houses and department stores of New York and Chicago.

The first figure shows a woman's garment in rubberized moiré silk. It is double-breasted, fits fairly tight, has patch pockets and turned-back cuffs, with tailored collar. It comes in navy blue, smoke gray or black.

The second cut shows a young girl's garment. This is made of rubberized poplin, has Raglan sleeves, patch pockets, a buttoned turn-over collar, and is a thoroughly serviceable garment for a young girl.

The third cut shows a man's rubber coat made of black rubber sheeting. This coat is double-breasted, with a protector collar, has outside pockets with flaps, and is lined.

The fourth figure shows a boy's heavy rubber coat lined with khaki. It fastens in front with hook fasteners, and the collar is close fitting. It is light in weight and warm.

These four illustrations give a very good idea of the rubber coats offered this winter for men, women and children.

NEW RUBBER COATS SHOWN THIS WINTER.

TRADE NEWS NOTES.

The Daily Consular and Trade Reports state that a European business man wishes to get into communication with a large American manufacturer of rubber tires for automobiles. It does not seem as if it ought to be difficult for a European business man to get in touch with American manufacturers of automobile tires. There are several of them and they are quite well known.

They are much exercised in Portland, Maine, over the discovery that the "asbestos" which was wrapped about the furnace pipes in an important building in that city caught fire and was the cause of a considerable conflagration. As asbestos is supposed to prevent this very thing, this particular "asbestos" was examined and found to be an extraordinary imitation made of coarse hair in conjunction with a little asbestos liquid, covered with white paper and held together with metal bands. It is said that quite a quantity of this same sort of "asbestos" has been put into buildings in that city.

H. M. Sadler, who was for so many years identified with the United States Rubber Co., and is now an officer in the Computing-Tabulating-Recording Co., of New York, states that the Hollerith tabulating machine, which is one of the machines handled by this company, is being very extensively introduced into the rubber trade, six or eight of the largest rubber companies having installed them in their service.

A Waterbury paper announces that the S. M. B. Rubber Co., whose president is Arthur C. Squires, will not in all probability be located, as was the original intention, at Naugatuck, Connecticut, but will locate somewhere in New Jersey. This change of plans is attributable to the fact that the business men of Naugatuck did not subscribe for as large an amount of stock as the company believed they would.

The New York "Times" quotes Colonel S. P. Colt, president of the United States Rubber Co., as commenting on the stability of crude rubber prices during the past six months as compared with a year and more ago, and assigning the reason for the same as follows:

"This highly gratifying change was due to several facts. In the first place, the speculators found a very limited market for rubber at the top prices, and consequently they were obliged to lower their quotations to get buyers. But most important of all was the large increase in the volume of Ceylon grades produced and placed on the market steadily. Not only was the volume of those grades a potent factor in bringing about the lower prices, but their quality was quite as effective.

"The trade found that, because of the more scientific methods used in treating those grades of rubber, they could be marketed much more quickly than the Brazilian grades, and could be substituted for them to a far greater extent than had been supposed or had really been possible.

"The Ceylon grades are to be more and more of a factor in the general rubber industry, and, in my opinion, it will be extremely difficult to bring about abnormally high prices again for the crude product. In other words, the prices for both it and manufactured products should be much more stable than heretofore. Otherwise I am unable to mention at the moment any notable changes in the rubber industry."

Recent Patents Relating to Rubber.

UNITED STATES OF AMERICA.

ISSUED DECEMBER 5, 1911.

NO. 1,010,539. Wheel tire. F. Vitali, Healdsburg, Cal.
1,010,558. Flexible arm and mitten. C. Williamson, Norfolk, Va.
1,010,621. Detachable rim for wheels. J. W. Hall and Cyril Baynes, London, England.
1,010,656. Hose reel. J. Martyn, Detroit, Mich.
1,010,699. Pneumatic massage tool. C. O. Sobinski, St. Louis, Mo.
1,010,751. Boot tree for use in treeing machines. A. H. M. Grune, Pirmasens, Germany.
1,010,786. Wheel. E. J. Nelson, Alliance, A. & F. H. Lang, Havelock, both in Nebraska.
1,010,884. Cross-chain for anti-skid devices. F. H. Fox, New York.
1,010,885. Anti-skid chain. F. H. Fox, New York.
1,011,013. Vehicle tire. A. Beldam, Baldock, England.
1,011,069. Rubber-boot jack. J. H. McKechnie, Montreal, Quebec, Canada.
1,011,090. Fire hose and analogous tubing constructed of laminated cohesive interwound members having varying limits of elasticity. L. A. Subers, Cleveland, Ohio.
1,011,091. Resilient wheel. J. A. Suddarth, St. Joseph, Mo.

Trade Marks.

58,419. Revere Rubber Co. Chelsea, Mass. A picture of a rubber heel. For heels and soles of boots and shoes.

ISSUED DECEMBER 12, 1911.

1,011,155. Tire-splicing mandrel. C. C. Chamberlain, Ionia, Mich.
1,011,305. Pneumatic tire. J. G. A. Kitchen, Lancaster, and I. H. Story, Ambleside, England.
1,011,345. Tire clamp for vehicle wheels. F. M., J. S. and W. W. Hilton, Akron, Ohio.
1,011,397. Hose reel. E. Anderson, Dayton, Ohio.
1,011,450. Tire-wrapping machine. A. De Laski, Weehawken, and P. D. Thropp, Trenton, N. J.
1,011,460. Pneumatic tread for boots and shoes. E. Maddocks, assignor of one-half to J. McNair, both of Toronto, Canada.
1,011,471. Pneumatic tire. W. A. McCool, Beaver Falls, Pa.
1,011,668. Manufacture of shoes. J. T. Tebbutt, Three Rivers, Quebec, Canada.
1,011,679. Resilient wheel. J. Vollman, assignor of one-third to P. De Vogel, both of Racine, Wis.
1,011,760. Cushion heel for boots and shoes. E. F. Diez, St. Louis, Mo.
1,011,807. Manufacture of rubber shoes. P. Kane and A. B. Griggs, Granby, Quebec, Canada.
1,011,865. Hose supporter. S. T. Shephard, Albany, N. Y.
1,011,894. Tire. W. H. Reed, Hartford, Conn., assignor to Revere Rubber Co., Providence, R. I.

Trade Marks.

50,954. Pennsylvania Rubber Co., Jeanette, Pa. The monogram *V and C* intertwined. For rubber vehicle tires.
57,511. Montag Bros., Atlanta, Ga. The word *Ironclad*. For surgical, dental and medical appliances.
58,391. American Belting & Tanning Co., Boston, Mass. Picture of life buoy, with words *life buoy*. For leather belting, pneumatic leather packing, etc.
58,416. The Gutta Percha & Rubber Mfg. Co., New York. The word *Wallabout*. For mechanical rubber goods.

ISSUED DECEMBER 19, 1911.

1,012,030. Compound plastic material. W. Hunnewell, Underwood, N. Y.
1,012,098. Tire inflator. E. Rector, New York.
1,012,159. Protection and anti-skidding armor for pneumatic tires. C. Reichel, Amsterdam, N. Y.
1,012,161. Process for making fillers for tires. F. T. Roberts, New York.
1,012,195. Suction cleaner. F. A. English, assignor to Birtman Electric Co., Chicago, Ill.
1,012,232. Process for making hollow articles from plastic material. Bernard Balg, Görlitz, Germany.
1,012,247. Spare tire cover. H. Cohen, New York.
1,012,299. Hand-grip. H. U. True, Brighton, Mass.
1,012,325. Tire protector. J. O. Caldwell, Jr., assignor of one-half to J. O. Caldwell, Sr., both of Boston, Mass.
1,012,353. Tire protector. J. C. Hammer, Chicago, Ill.
1,012,367. Detachable wheel rim. K. Kindscherf, assignor to Continental-Caoutchouc & Gutta-Percha Compagnie, both of Hanover, Germany.
1,012,375. Tire. F. H. Lathrop, Chicago, Ill.
1,012,459. Vehicle tire. A. L. Siegrist, Akron, Ohio.
1,012,473. Nipple cap. A. Stern, Frankfort-on-the-Main, Germany.
1,012,502. Elastic connecting device. J. F. Atwood, Claremont, N. H.
1,012,541. Method of treating trees for extracting sap. J. T. Gilmer, Mobile, Ala.
1,012,543. Antiseptic rubber-dam holder. C. A. Hallett, Riverhead, N. Y.

Designs.

41,994. Tire tread. W. T. Dorgan, Saginaw, Mich.

Trade Marks.

50,131. I. B. Kleinert Rubber Co., New York. The word *Kimono*. For dress shields.
54,610. United and Globe Rubber Manufacturing Cos., Trenton, N. J. *U. and G.* Descriptive title. For rubber belting, hose, etc.
55,259. The Goodyear Tire & Rubber Co., Akron, Ohio. Picture of a band or stripe. For elastic vehicle tire treads.
58,345. Barrett Mfg. Co., New York. The words *Black Diamond*. For waterproofing and insulating compositions.
59,030. Sears, Roebuck & Co., Chicago, Ill. The word *Profile*. For leather and rubber footwear.
59,333. Behrend & Rothschild, New York. The trade mark *B. & R.* For rubber toys and pacifiers.

ISSUED DECEMBER 26, 1911.

1,012,597. Heel. J. L. Church, Bellingham, Wash.
1,012,636. Shoe. W. E. Hemenover, assignor to the B. F. Goodrich Co., both of Akron, Ohio.
1,012,653. Massage brush. B. D. Knickerbocker, Chicago, Ill.
1,012,879. Gripping device for securing auxiliary or spare rims to automobile wheels. A. Manson, Paris, France.
1,012,898. Air valve for pneumatic tires. F. M. Neal, Bridgeport, Conn.
1,012,951. Shoe for tires. Cyrus A. Whyland, Marion, Mass.
1,012,978. Collapsible shoe-tree. C. A. Bowron, New York.
1,012,980. Artificial palate. T. W. Brophy, Chicago, Ill.
1,013,011. Wheel rim. Henry J. Graves, Kensington, London, England.
1,013,063. Vulcanizing device. J. M. Robbins and J. F. Crew, Rochelle, Tex.
1,013,085. Tire for vehicle wheels. W. T. Whitlock, assignor to the Fisk Rubber Co., both of Chicopee Falls, Mass.

Trade Marks.

15,457. A. W. Faber, Stein, Germany. The name *A. W. Faber*. For stationery.
15,458. A. W. Faber, Stein, Germany. The initials *A. W. F.* For stationery.
16,288. The Canfield Rubber Co., Bridgeport, Conn. The word *Canfield*. For waterproof fabrics.
58,946. Keystone Roofing Mfg. Co., York, Pa. The name *X-L-Oid*. For rubber roofing.

[NOTE.—Printed copies of specifications of United States patents may be obtained from THE INDIA RUBBER WORLD office at 10 cents each, postpaid.]

GREAT BRITAIN AND IRELAND.

PATENT SPECIFICATIONS PUBLISHED.

The number given is that assigned to the Patent at the filing of the application, which in the case of these listed below was in 1911.

**Denotes Patents for American Inventions.*

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, DECEMBER 6, 1911.]

19,028. Improvements in molded tires. W. Drury, Fulham, London.
19,100. Rubber connections for electrical heating appliances. H. Lofquist, Stockholm, Sweden.
19,122. Tire attachments to rims. F. & A. Probert, Llanelly, Wales.
*19,162. Pneumatic cushions on vehicle wheels. L. R. Gruss, Chico, Cal., U. S. A.
19,296. Rubber-tapping knives. H. Oliver, 49 West Brook Bank, Sheffield.
*19,317. Seamless hollow rubber articles. G. D. Farnam, Akron, Ohio, U. S. A.
19,328. Composition of cotton impregnated with rubber. G. Metcalfe, Christchurch, New Zealand.
19,332. Improvements in tread bands. W. G. Skew, 47 Devonshire Mews, South, London.
19,432. Rubber heel pads. J. Wilmshöfer, Düsseldorf, Germany.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, DECEMBER 13, 1911.]

19,512. Fitting of tread bands. F. Little, Fenham, New Castle-on-Tyne.
19,595. Vehicle shock absorber. C. K. Mills, 23 Southampton Buildings, London.
19,651. Tire attachments to rims. W. C. Sneyd, Sale, Cheshire, and D. V. Jones, 5 Cumberland street, Manchester.
19,730. Improvement in coagulation of latex. J. S. da Costa, Para, Brazil, and R. Bridge, Castleton, Lancashire.
19,739. Re-forming waste rubber. H. H. Tarver, Branstone, Burton-on-Trent.
19,800. Packing for pipe joints. W. E. Lake, 7 Southampton Buildings, London.
19,853. Flexible compositions for use as rubber substitutes. T. D. Kelly, Southend-on-Sea.
19,867. Knitted insertions in rubber articles. E. C. R. Marks, 58 Lincoln's Inn Fields, London.
19,973. Improved pneumatic cushion on wheels. R. Simpson and E. Wallace, 56 Moorgate street, London.
20,017. Rubber tires on roller skates. M. Wunderlich, Rosenheim, Bavaria, Germany.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, DECEMBER 20, 1911.]

20,097. Resilient heel pads. A. Ashley, Melbourne, Australia.
20,128. Rubber discs for springs. Avon India Rubber Co., Melksham.
20,130. Tire attachments to rims. R. Rondeau, 61 Rue Boursault, Paris, France.
20,134. Tire attachments to rims. A. A. Plank, Blayney, New South Wales, Australia.
20,180. Use of rubber in electrodes. H. E. Beach, Birmingham.
20,192. Tire gaiters. A. Buxton, Levenshulme, Manchester.
20,234. Rubber rollers for paper feeding appliances. F. Ruppel, Strassburg, Germany.
20,292. Rubber strips in shoes. A. Bryan, Kettering.
20,302. Rubber sleeve valves. J. A. C. Wright; and Warne, Wright and Rowland, Birmingham.
20,309. Rubber bands in wheel rims. L. Graab, C. Lenhardt and F. Lenhardt, Mannheim, Germany.
*20,344. Use of pontianak or other similar substance in sealing compositions. J. C. Taliaferro, Baltimore, Maryland, U. S. A.
20,451. Attachments to wheels for preventing slipping. H. Bird, Rotherhithe street, London.
20,483. Rubber-tapping knives. H. Rayne, Witu-Lamu, British East Africa.
20,575. Pneumatic cushions on vehicle wheels. J. Lees, Hutton Mount, Essex.
20,589. Rubber tension springs for vehicles. F. Walton, 114 Holborn, London.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, DECEMBER 29, 1911.]

20,633. Improvements in attachments of tires to rims.
20,634. Rubber protection for electric coils. Special Fabrik für Aluminum Spulen und Leitungen Ges., Berlin, Germany.
20,781. Rubber pads in foundations for machinery, etc. L. C. Peters, 26 Elsham road, Kensington, and E. J. Fisk, 13 New street hill, Shoe Lane, London.
20,789. Rubber valve plugs. R. H. Patterson, Edinburgh, and A. D. Jenkins, London.
20,820. Improvements in tread bands of pneumatic tires. T. H. Roberts, Leyland, Lancashire.
20,838. Tools for repairing tires. A. Kendrick, Hooton.
*20,953. Improvements in cushion heels. E. R. Teer, Anderson, Indiana, U. S. A.
20,996. Extra rubber cover for tires. W. Gummer, St. John's Wood, London.
21,061. Rubber seat lining for children's cycles. J. A. Hill, Waverton, near Chester.
20,074. Re-forming of rubber. H. Tarver, Branstone, Burton-on-Trent.
20,079. Rubber blocks in spring wheels. A. Beldam, Baldock, Hertfordshire.
21,118. Improvements in molding rubber. E. B. Killen, 52 Queen Victoria street, London.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, DECEMBER 30, 1911.]

21,186. Razor wipers of rubber. G. Clark, Brockley, London.
*21,275. Detachable rubber heels. A. B. Heimbach, Duluth, Minnesota, U. S. A.
21,318. Rubber pads in carriage window sashes. A. J. Dennett, Anerley, London.
*21,338. Pneumatic springs. B. Bell, 5301 Chester avenue, Philadelphia, Pa., U. S. A.
21,360. Tools for removing tires. G. Scott, Denny, Stirlingshire.
21,394. Improvements in tread bands of tire covers. J. F. F. W. Ure, 12 Sloane Court, London.

THE FRENCH REPUBLIC.

PATENTS ISSUED (with Dates of Application).

429,507 (May 8, 1911). F. Tolkien. Composition to replace rubber and process of making same.
429,519 (May 9). L. Liais. Improvements in pneumatic tire covers.
429,546 (May 9). E. Reigeisen. Imperforable pneumatic tire.
429,567 (May 10). O. Fromond. Pneumatic suspension of vehicles.
429,664 (May 12). H. A. Wanklyn. Improvements in substances for stopping holes in pneumatic tires and in methods of their insertion.
429,711 (May 15). J. H. Brown and D. A. Berry. Improvements in rubber shoes.
429,855 (April 21). J. Cairns. Improvements in vehicle tires.
429,867 (May 2). F. Keller-Kurz. Vehicle tires.
429,876 (July 28, 1910). O. Grenier. Elastic non-pneumatic vehicle tires.
429,967 (May 19, 1911). J. O'Brien. Machine for inserting and fixing steel rivets in pneumatic tires.
429,968 (May 19). M. Bovy. Pneumatic wheel without air chamber.
429,997 (May 20). C. A. E. Putois Soft vehicle tire.
430,048 (May 23). M. Clark. Pneumatic cushion tire for automobiles and other vehicles
429,879 (May 23). E. Van den Kerkhoff. Process of manufacture of plastic masses resembling gutta-percha.
430,061 (May 23). N. J. Busby. Improvements in vehicle tires.
429,959 (May 19). Gebrüder Erdmann and F. Rudolph. Process of applying rubber to the manufacture of billiard cues.
430,192 (April 26). A. Boerner. Elastic tires for automobiles and other vehicles.
430,226 (May 26). J. Marx. Process and appliances for making leather covers for pneumatic tires.
430,253 (May 27). J. Anthony. Covers for pneumatic tires.
430,275 (May 29). T. S. MacGiehan. Pneumatic tires and processes for their manufacture and adjustment.
430,183 (April 11). F. Gössel and A. Sauer. Artificial rubber extracted from concentrated Soya oil and process for its manufacture.
430,344 (May 31). J. Ellwood Lee Company. Improvements in pneumatic tires.
430,232 (May 26). Electro Chemical Rubber & Manufacturing Co. Process for the manufacture of rubber on metal.
430,386 (June 1). C. G. Kleinschmidt. Wheel with pneumatic tire, with divided rim.

[NOTE.—Printed copies of specifications of French patents can be obtained from R. Robet, Ingénieur-Conseil, 16 avenue de Villier, Paris, at 50 cents each, postpaid.]

THE GERMAN EMPIRE.

PATENTS ISSUED (with Dates of Validity).

241,887 (from January 16, 1910). Klaas Peter Boerma. Wandsbek b. Hamburg. Production of elastic horn-like substance from caseine.
241,878 (from January 31, 1911). Walter Ruhm, Berlin. Hose coupling, with vertical valves.
242,019 (from April 23, 1911). Henry Hamet, Paris, and Louis Monnier, Lille. Coagulation of rubber from freshly collected latex.
242,486 (from June 1, 1910). Maurice Carlton Clark, La Crosse, Wisconsin, U. S. A. Press for vulcanizing rubber articles.
242,467 (from July 16, 1908). Dr. Ludwig Berend, Aix-la-Chapelle. Production of elastic masses from nitro- or acetyl-cellulose.
242,597 (from September 22, 1909). Maurice Ferdinand de Redon de Colombier, Paris. Pneumatic tires for heavy vehicles.
242,629 (from October 25, 1910). Louis Schopper, Leipzig. Appliance for defining elasticity of rubber and like substances.
242,756 (from August 9, 1910). Peter Kottlechner, Vienna. Process for making asbestos belting in various widths.
242,819 (from April 5, 1911). Walther Leede, Brunswick. Flexible hose for pneumatic conveying.

THE KINGDOM OF BELGIUM.

238,694 (1911). J. Gathy, Mons. New filler for rubber.
238,449 (1911). A. Olier & Co., Clermont-Ferrand, France. Vulcanizing press.
238,546 (1911). H. Hoffmann and G. Schneider, Ohlum, near Hohenhameln and Bekum, near Hohenhameln (Germany). Appliance for cutting and destroying parasitical plants.
238,050 (1911). J. Aktschourin, Aktschourinski Tubik, Kasan Railway Station (Russia). Process for production of a brown ligneous mass (hemi-cellulose) by means of resinous wood.
237,775 (1911). M. W. Fink and A. Kobiolke, Middle Brighton, near Melbourne, Australia. Process for manufacture of objects partially or wholly composed of rubber.
237,627 (1911). G. Brioschi, Milan, Italy. Improvements in rubber covers for pneumatic tires.
237,740 (1911). L. Liais, Rue de la Pompe, 129 bis Paris. Improvements in rubber fabrics for covers of pneumatic tires.

INDIA-RUBBER GOODS IN COMMERCE.

EXPORTS FROM THE UNITED STATES.

OFFICIAL statement of the values of exports of manufactures of india-rubber and gutta-percha for the month of November, 1911, and for the first eleven months of five calendar years:

Months.	Belting, Packing and hose.	Boots and Shoes.	All Other Rubber.	TOTAL.
November, 1911.....	$176,459	$77,583	$592,909	$846,951
January-October	1,909,154	1,487,563	5,935,113	9,331,830
Total, 1911.....	$2,085,613	$1,565,146	$6,528,022	$10,178,781
Total, 1910.....	1,918,611	2,094,016	5,193,806	9,206,433
Total, 1909.....	1,637,018	1,474,559	3,978,186	7,089,763
Total, 1908.....	1,131,272	1,224,799	3,255,507	5,611,578
Total, 1907.....	1,294,460	1,532,595	3,643,744	6,470,799

The above heading "All Other Rubber," for the month of November, 1911, and for the first eleven months of the current year, includes the following details relating to tires:

Months.		For Automobile	All Other.	Total.
November, 1911.....	*values*	$177,210	$45,738	$222,948
January-October		2,080,517	480,915	2,561,432
Total, ...		$2,257,727	$526,653	$2,784,380

AN EXCELLENT TIRE LUBRICANT WHICH MAKES the inner tube much easier to put in is flake graphite, which is said to last longer than soapstone and to be better for the rubber. In fact the graphite does not injure the rubber at all. It, however, is not particularly pleasant to handle.

Review of the Crude Rubber Market.

THE better feeling which characterized the opening of the year in the London market was reflected in the advanced prices obtained at the auctions of the 3rd, and maintained in subsequent transactions. At the close of the first week the price of 4*s.* 3½*d.* for up-river fine had advanced to 4*s.* 4½*d.*

For the more distant positions buyers displayed a fear of the repetition of the enhanced activity which marked the operations of last February. In this connection the reported comparative reduction in stocks as compared with that period is considered as being to a certain extent offset by the prospects of larger supplies in the future. The fact is, however, urged that the demands of consumption in 1911 practically absorbed all the production, and a feeling of confidence is said to prevail.

Fine grades of rubber displayed a marked preference on the part of English buyers, as compared with medium descriptions; this feature of demand being illustrated by the increasing volume of London forward business in plantation rubber. The relative cheapness of the hard cure is being realized.

Interest in the latter part of the month was more or less directed to the continental auctions. That of Amsterdam realized good prices for relatively small offerings, while that of Havre was marked by material advances. A distinctly noticeable upward movement was reported at Antwerp, which brought some African grades above the parity of Pará, buyers taking all the offerings, consisting of about 280 tons, principally Congos. From the activity thus displayed, it is considered that certain continental manufacturers must find African rubbers very suitable for their purposes. American manufacturers have, it is reported, been using African rubbers largely.

By sympathy an advance was obtained in London on Pará, which touched 4*s.* 8½*d.* on the 27th. Much interest was being displayed in the London plantation sales scheduled for January 30th.

NEW YORK QUOTATIONS.

FOLLOWING are the quotations at New York for Pará grades, one year ago, one month ago and January 30—the current date.

PARA.	Feb. 1, '11.	Jan. 1, '12.	Jan. 30, '12.
Islands, fine, new	112@113	96@ 97	108@109
Islands, fine, old	none here	98@ 99	110@111
Upriver, fine, new	124@125	104@105	111@112
Upriver, fine, old	128@129	108@109	114@115
Islands, coarse, new	65@ 66	62@ 63	64@ 65
Islands, coarse, old	none here	none here	none here
Upriver, coarse, new	96@ 97	89@ 90	94@ 95
Upriver, coarse, old	100@101	none here	none here
Cametá	69@ 70	63@ 64	66@ 67
Caucho (Peruvian) ball	94@ 95	88@ 89	94@ 95
Caucho (Peruvian) sheet	none here	none here	none here
PLANTATION PARA.			
Fine smoked sheet	140@141	115@116	133@134
Fine pale crepe	124@125	119@120	131@132
Fine sheets and biscuits	118@119	115@116	127@128
CENTRALS.			
Esmeralda, sausage	90@ 91	86@ 87	92@ 93
Guayaquil, strip	none here	none here	none here
Nicaragua, scrap	88@ 89	83@ 84	91@ 92
Panama	none here	none here	none here
Mexican, scrap	86@ 87	84@ 85	90@ 91
Mexican, slab	50@ 51	53@ 54	54@ 55
Mangabeira, sheet	68@ 70	62@ 63	none here
Guayule	60@ 61	53@ 54	60@ 62
Balata, sheet	82@ 84	81@ 82	89@ 90
Balata, block	58@ 68	53@ 54	56@ 57
AFRICAN.			
Lopori ball, prime	109@110	101@102	109@110
Lopori strip, prime	none here	none here	105@106
Aruwimi	105@106	100@101	106@107
Upper Congo ball, red	109@110	none here	112@113
Ikelemba	none here	none here	none here
Sierra Leone, 1st quality	105@106	89@ 90	95@ 96
Massai, red	106@107	90@ 91	102@103
Soudan, Niggers	94@ 95	none here	none here
Cameroon ball	62@ 63	62@ 63	69@ 70
Benguela	75@ 76	64@ 65	72@ 73
Madagascar, pinky	none here	none here	none here
Accra, flake	40@ 41	26@ 27	27@ 28
EAST INDIAN.			
Assam	90@ 91	none here	none here
Pontianak	6@6⅛	none here	5⅝@5¾
Borneo	none here	none here	none here

Late Pará cables quote:

	Per Kilo.		Per Kilo.
Islands, fine	4$750	Upriver, fine	5$700
Islands, coarse	2$600	Upriver, coarse	4$500
		Exchange	16 3/16*d.*

Latest Manáos advices:

Upriver, fine	5$750	Exchange	16 2/16*d.*
Upriver, coarse	4$550		

New York.

IN REGARD to the financial situation, Albert B. Beers (broker in crude rubber and commercial paper, No. 68 William street, New York) advises as follows: "During January there has been a good demand for paper, both from New York banks and out of town, the best rubber names ruling at 4½@4¾ per cent., and those not so well known 5@5½ per cent."

NEW YORK PRICES FOR DECEMBER (NEW RUBBER).

	1911.	1910.	1909.
Upriver, fine	$1.04@1.07	$1.36@1.50	$1.75@1.93
Upriver, coarse	.90@ .93	1.00@1.05	1.11@1.21
Islands, fine	.95@1.01	1.19@1.25	1.64@1.72
Islands, coarse	.60@ .64	.70@ .73	.69@ .72
Caméta	.60@ .65	.72@ .76	.79@ .82

SUMMARY OF PRICES FOR 1911.

	UPRIVER.		ISLAND.		CAMETA.
	Fine.	Coarse.	Fine.	Coarse.	Coarse.
January	115@130	90@ 98	100@115	62@69	64@73
February	128@168	98@120	115@156	65@90	68@95
March	145@166	108@118	130@156	62@90	79@92
April	118@145	88@110	112@135	60@63	75@80
May	93@128	82@ 89	92@122	58@67	67@76
June	95@103	81@ 85	91@ 98	58@63	67@71
July	99@17	82@ 96	92@110	58@63	70@75
August	109@117	95@ 99	102@109	61@63	66@68
September	113@120	94@ 99	106@112	62@64	66@68
October	100@112	90@ 96	96@107	56@63	60@66
November	99@106	87@ 91	93@100	57@60	60@62
December	104@107	90@ 93	95@101	60@64	60@65
AVERAGE PRICES.					
1911	118¼	95	110¼	64	70½
1910	201¼	136¼	189¾	90	100
1909	159¾	107	149¾	66¼	77
1908	93¼	67½	88¼	47½	52
1907	109¼	88	104½	61¾	65½
1906	124½	93½	121	70	72¼

MORSE'S STATISTICS OF NEW YORK ARRIVALS.

	1908.	1909.	1910.	1911.
Fine Pará ...*tons*	12,164	11,982	10,274	10,818
Coarse Pará	5,152	5,609	4,622	5,074
Plantation Ceylon	.....	1,730	3,611	6,556
a Centrals	5,598	4,961	4,636	4,316
East India and Africans	6,563	6,847	9,773	8,324
Total	29,477	31,129	32,916	35,088

a Including Caucho.

African Rubbers.

NEW YORK STOCKS (IN TONS.)

December 1	140	July 1, 1911	90
January 1, 1911	115	August 1	90
February 1	115	September 1	112
March 1	11	October 1	67
April 1	98	November 1	45
May 1	98	December 1	60
June 1	90	January 1, 1912	58

Statistics of Para Rubber (Excluding Caucho).

	NEW YORK. Fine and Medium.	Coarse.	Total 1911.	Total 1910.	Total 1909.
Stocks, November 30...*tons*	305	53 =	358	156	218
Arrivals, December	1,310	431 =	1,741	1,533	2,675
Aggregating	1,615	484 =	2,099	1,689	2,893
Deliveries, December	1,325	442 =	1,767	1,478	2,686
Stocks, December 31.....	290	42 =	332	211	207

	PARA. 1911.	1910.	1909.	ENGLAND. 1911.	1910.	1909.
Stocks, November 30 *tons*	3,050	1,190	1,385	935	1,335	500
Arrivals, December	3,455	2,315	3,140	884	1,248	960
Aggregating	6,505	3,505	4,525	1,819	2,583	1,460
Deliveries, December	3,830	2,830	4,375	994	1,093	1,075
Stocks, December 31..	2,675	675	150	825	1,490	385

	1911.	1910.	1909.
World's visible supply, December 31..*tons*	5,852	3,891	2,358
Pará receipts, July 1 to December 31.....	14,635	13,400	14,970
Pará receipts of caucho, same dates.....	1,760	2,370	1,840
Afloat from Pará to United States, Dec. 31	1,300	435	916
Afloat from Pará to Europe, Dec. 31....	720	1,080	700

Rubber Stock at Para

A further reduction has brought down the stock to just one-half of the highest point reached in 1911, of 5,350 tons on May 31.

1911.	Tons.	1911.	Tons.
January 31.....	2,085	July 31.....	3,884
February 28.....	3,787	August 31.....	3,450
March 31.....	4,214	September 30.....	3,102
April 30.....	5,104	October 31.....	3,320
May 31.....	5,350	November 30.....	3,050
June 30.....	4,545	December 31.....	2,675

WEEKLY MOVEMENT OF LONDON PRICES.

[IN SHILLINGS AND PENCE PER POUND.]

1911.			
July 7.....	4/2½	October 20.....	4/6½
July 14.....	4/5½	October 27.....	4/4
July 21.....	4/7	November 3.....	4/3
July 28.....	4/8	November 10.....	4/4½
August 4.....	4/7½	November 17.....	4/3
August 11	4/7½	November 24.....	4/3½
August 18.....	4/7½	December 1.....	4/4½
August 25.....	4/10½	December 8.....	4/5½
September 1.....	4/8½	December 15	4/4½
September 8.....	4/9	December 22.....	4/4
September 15.....	5/	December 29.....	4/3½
September 22.....	4/10½	January 5.....	4/4½
September 29.....	4/8	January 12.....	4/5½
October 6.....	4/7	January 19.....	4/5½
October 13.....	4/5		

British Crude Rubber Imports.

OFFICIAL statistics for calendar years, stated in pounds:

YEAR.	Imports.	Exports.	Net Imports.
1898	54,833,072	33,023,536	21,809,536
1899	50,360,912	34,284,320	16,076,592
1900	57,593,312	32,864,832	24,728,480
1901	52,245,088	32,904,704	19,340,384
1902	46,970,000	32,676,112	14,293,888
1903	54,443,760	37,658,768	16,784,992
1904	55,555,584	33,415,536	22,140,048
1905	66,464,944	37,464,112	29,000,832
1906	67,992,624	36,988,336	31,004,288
1907	74,736,928	39,090,912	35,646,016
1908	64,407,392	40,153,792	24,253,600
1909	78,406,944	44,567,488	33,839,456
1910	98,220,528	52,401,664	45,818,864
1911	101,480,424	63,804,384	37,676,240

GUTTA-PERCHA.

YEAR.	Imports.	Exports.	Net Imports.
1898	7,082,656	1,151,136	5,931,520
1899	9,239,664	840,224	8,399,440
1900	14,118,608	1,709,792	12,408,816
1901	9,905,056	1,224,832	8,680,224
1902	9,395,568	1,190,784	8,204,784
1903	5,198,032	741,664	4,456,368
1904	3,056,256	890,624	2,165,632
1905	5,088,608	1,020,880	4,067,728
1906	5,966,352	973,952	4,992,400
1907	6,516,048	1,268,624	5,247,424
1908	3,575,936	521,920	3,054,016
1909	5,064,864	680,736	4,384,128
1910	10,870,048	762,608	10,107,440
1911	7,380,800	1,074,976	6,305,824

Para.

R. O. AHLERS & Co, report [January 12:]

Market has been steady and without any change. The lots arriving here from Upriver have been bought and sold without much discussion.

Rubber Scrap Prices.

LATE NEW YORK QUOTATIONS.—Prices paid by consumers for carload lots, per pound—are unchanged:

	February 1, 1912.
Old rubber boots and shoes—domestic.....	9¼@ 9⅜
Old rubber boots and shoes—foreign.....	9⅛@ 9¼
Pneumatic bicycle tires.....	4½@ 4¾
Automobile tires	8¼@ 8½
Solid rubber wagon and carriage tires.....	9¼@ 9¾
White trimmed rubber.....	11 @11½
Heavy black rubber.....	4¾@ 5
Air brake hose	4½@ 4¾
Garden hose	1¼@ 1⅜
Fire and large hose.....	2 @ 2¼
Matting	⅞@ 1

COMPARATIVE RUBBER STATISTICS.

	Comparative Rates of Fine Pará. Liverpool.	New York.	Total Exports from Pará. Pará Weights.	Total Imports into the United States. Pará Grades. Excluding Caucho.	Cent. E. I. Af., & Caucho.
	s. d.				
1894.....	2 9 to 3 1	$0.64½ to $0.73	18,246 tons.	9,453 tons.	5,190 tons.
1895.....	3 0¼ to 3 4½	.70 to .81½	20,698 "	9,888 "	6,294 "
1896.....	3 0½ to 3 8¾	.71 to .85	21,530 "	9,221 "	5,112 "
1897.....	3 5 to 3 9	.79½ to .89	22,630 "	10,491 "	7,180 "
1898.....	3 7½ to 4 5	.82 to 1.06	21,890 "	9,739 "	8,881 "
1899.....	3 10 to 4 7¼	.91 to 1.10	25,115 "	12,498 "	10,597 "
1900.....	3 8½ to 4 9	.83 to 1.11½	26,727 "	11,985 "	8,483 "
1901.....	3 4 to 3 11½	.76 to .95	30,296 "	13,142 "	10,066 "
1902.....	2 10 to 3 9½	.66 to .92	28,668 "	12,901 "	8,941 "
1903.....	3 6¼ to 4 8	.78 to 1.13	31,079 "	13,934 "	10,826 "
1904.....	3 10½ to 5 6	.89 to 1.32	29,984 "	14,367 "	13,256 "
1905.....	4 10¼ to 5 8¾	1.13 to 1.35	33,913 "	13,881 "	14,754 "
1906.....	4 11½ to 5 5½	1.16 to 1.28	35,251 "	15,128 "	14,808 "
1907.....	2 11¾ to 5 3	.69 to 1.24	37,321 "	15,118 "	14,315 "
1908.....	2 9¼ to 5 5	.65 to 1.30	38,848 "	17,316 "	12,161 "
1909.....	4 10 to 9 2	1.13 to 2.15	39,287 "	17,591 "	13,538 "
1910.....	4 10 to 12 4½	1.16 to 2.90	37,954 "	14,896 "	18,020 "
1911.....	3 10 to 7 1	.90 to 1.67	35,936 "	15,892 "	19,196 "

IMPORTS FROM PARA AT NEW YORK.

[The Figures Indicate Weight in Pounds.]

JANUARY 2.—By the steamer *Ucayali*, from Pará:

	Fine.	Medium.	Coarse.	Caucho.	Total.
Arnold & Zeiss	22,300	3,700	30,300	.....=	56,300
General Rubber Co.	5,700	400	36,300	.....=	42,400
Meyer & Brown	5,700	400	21,800	700=	28,600
H. A. Astlett	7,700	6,000	4,800	14,900=	33,400
New York Commercial Co.	.....	3,200	9,900	4,600=	17,700
F. Rosenstern Co.	3,500	.....	4,900	5,000=	13,400
Total	44,900	13,700	108,000	25,200=	191,800

JANUARY 4.—By the steamer *Hubert*, from Manáos and Pará:

Arnold & Zeiss	514,500	66,200	108,500	25,100=	714,300
New York Commercial Co.	137,100	38,300	84,700	11,900=	272,000
General Rubber Co.	112,500	16,200	46,700	11,700=	187,100
Meyer & Brown	90,500	19,800	19,200	.....=	129,500
De Lagotellerie & Co.	13,600	5,000	7,900	.....=	26,500
Total	868,200	145,500	267,000	48,700=	1,329,400

JANUARY 12.—By the steamer *Rio de Janeiro*, from Pará:

Meyer & Brown	31,400	2,600	53,000	.....=	86,500
De Lagotellerie & Co.	17,100	1,400	.....	.....=	18,500
G. Amsinck & Co.	9,600	.....	6,600	.....=	16,200
Total	58,100	4,000	59,600	.....=	121,200

JANUARY 10.—By the steamer *Goyaz*, from Pará:

Meyer & Brown	.....	.....	41,600	.....=	41,600
Hagemeyer & Brunn	10,400	2,100	7,900	.....=	20,400
Arnold & Zeiss	.....	.....	24,400	.....=	24,400
Henderson & Korn	15,000	.....	.....	.....=	15,000
New York Commercial Co.	.....	1,100	8,600	.....=	9,700
Total	25,400	3,200	82,500	.....=	111,100

JANUARY 15.—By the steamer *Dominic*, from Manáos and Pará:

Arnold & Zeiss	300,900	38,900	170,300	20,900=	531,000
New York Commercial Co.	187,300	61,800	85,000	8,700=	342,800
General Rubber Co.	126,500	22,300	19,000	7,900=	175,700
Meyer & Brown	79,600	4,400	15,200	22,400=	121,600
L. Johnson & Co.	.....	.....	.....	22,400=	22,400
De Lagotellerie & Co.	.....	.....	13,200	.....=	13,200
Total	694,300	127,400	302,700	82,300=	1,206,700

JANUARY 26.—By the steamer *Christopher*, from Manáos and Pará:

Arnold & Ziess	509,500	49,800	315,200	14,200=	888,700
New York Commercial Co.	428,100	75,400	116,900	16,200=	636,600
General Rubber Co.	135,600	24,100	33,900	4,100=	197,700
Meyer & Brown	64,300	13,300	62,200	.....=	139,800
De Lagotellerie & Co.	13,600	5,300	13,200	.....=	32,100
Henderson & Korn	9,000	300	2,600	.....=	11,900
Total	1,160,100	168,200	544,000	34,500=	1,906,800

PARA RUBBER VIA EUROPE.

POUNDS.

DECEMBER 26.—By the *Campania*=Liverpool:
N. Y. Commercial Co. (Fine)... 135,000
Arnold & Zeiss (Fine)..... 50,000 185,000

DECEMBER 27.—By the *Celtic*=Liverpool:
N. Y. Commercial Co. (Fine)... 150,000
Arnold & Zeiss (Fine)..... 89,000
Robinson & Co. (Fine)..... 11,000
A. W. Brunn (Fine)..... 10,000
Raw Products Co. (Coarse).... 45,000
Arnold & Zeiss (Coarse)..... 11,500 316,500

JANUARY 2.—By the *Saxonia*=Liverpool:
Arnold & Zeiss (Fine)..... 155,000
N. Y. Commercial Co. (Fine)... 55,000
Raw Products Co. (Coarse).... 13,500
Arnold & Zeiss (Coarse)..... 22,500
Henderson & Korn (Coarse)... 8,000
H. A. Gould Co. (Fine)..... 4,500 258,500

JANUARY 5.—By the *Lusitania*=Liverpool:
N. Y. Commercial Co. (Fine)... 56,000
Arnold & Zeiss (Fine)..... 9,000
Raw Products Co. (Coarse).... 11,500 76,500

JANUARY 5.—By the *Pennsylvania*=Hamburg:
N. Y. Commercial Co. (Fine)... 25,000
Rubber Trading Co. (Fine)..... 5,500
N. Y. Commercial Co. (Coarse). 11,500 42,000

JANUARY 16.—By the *Franconia*=Liverpool:
Robinson & Co. (Fine)..... 22,500
H. A. Gould Co. (Fine)..... 4,500
Raw Products Co. (Coarse).... 27,000
N. Y. Commercial Co. (Coarse). 11,000 65,000

JANUARY 19.—By the *Moltke*=Hamburg:
Meyer & Brown (Fine)..... 8,000

JANUARY 22.—By the *Carmania*=Liverpool:
N. Y. Commercial Co. (Fine)... 55,000
Arnold & Zeiss (Fine)..... 45,000
A. L. Blitz (Fine)..... 8,000
Robinson & Co. (Fine)..... 13,500
Henderson & Korn (Fine)..... 11,500
A. W. Brunn (Fine)..... 5,500
In transit (Fine)..... 4,500
Arnold & Zeiss (Coarse)..... 4,500
Raw Products Co. (Coarse).... 3,500 151,000

JANUARY 23.—By the *Advance*=Mollendo:
W. R. Grace & Co. (Caucho)..... 5,000

OTHER NEW YORK ARRIVALS.

CENTRALS.

[*This sign, in connection with imports of Centrials, denotes Guayule rubber.] POUNDS.

DECEMBER 23.—By the *President Grant*=Hamburg:
N. Y. Commercial Co..... *20,000
Ed. Maurer *6,500 *26,500

DECEMBER 26.—By the *Camaguy*=Tampico:
Ed. Maurer *110,000
H. Marquardt & Co..... *40,000
New York Commercial Co..... *34,000
Arnold & Zeiss..... *25,000
For Europe *35,000 *244,000

DECEMBER 26.—By the *Celtic*=Liverpool:
General Rubber Co..... 11,500
George A. Alden & Co..... 11,000 22,500

DECEMBER 27.—By *El Occidente*=Galveston:
Continental-Mexican Rubber Co.. *30,000
Charles T. Wilson..... *11,500 *41,500

DECEMBER 28.—By the *Prinz August Wilhelm*=Colon:
G. Amsinck & Co..... 30,000
Andean Trading Co..... 3,000
Pablo, Calvert & Co..... 1,500
Wessels, Kulenkampff & Co..... 1,500 36,000

DECEMBER 28.—By the *Mesaba*=London:
Charles T. Wilson..... *15,000
George A. Alden Co..... 15,000 30,000

DECEMBER 28.—By the *Advance*=Colon:
Otto Gerdan & Co..... 20,000
Isaac Brandon & Bros..... 11,000
Hirzel, Feltman & Co..... 2,500
Pablo, Calvert & Co..... 2,000
W. R. Grace & Co..... 2,500
Dumarest Bros. & Co..... 1,500 39,500

DECEMBER 29.—By the *Creole*=New Orleans:
Manhattan Rubber Mfg. Co.... 6,000
A. T. Morse & Co..... 3,500
Eggers & Heinlein..... 2,500
Robinson & Co..... 2,000 14,000

DECEMBER 30.—By the *Monterey*=Vera Cruz:
E. Nelson Tibbals & Co..... 2,500
L. Johnson & Co..... 5,500
Ed. Maurer 1,500
H. Marquardt & Co..... 1,500
A. Lindo & Co..... 1,000 12,000

JANUARY 2.—By the *Antilla*=Tampico:
New York Commercial Co.....*135,000
Ed. Maurer *80,000
For Europe *45,000 *260,000

JANUARY 2.—By *El Mundo*=Galveston:
Continental-Mexican Rubber Co..*125,000
Charles T. Wilson..... *20,000 *145,000

JANUARY 3.—By the *Altai*=Colombia:
Caballero & Blanco..... 1,500
J. A. Pauli & Co..... 1,000
G. Amsinck & Co..... 1,000
Heilbron, Wolff & Co..... 1,000
A. Held 1,000 5,500

JANUARY 3.—By the *Minneapolis*=London:
New York Commercial Co..... 35,000
Charles T. Wilson..... 11,500 46,500

JANUARY 4.—By the *Verdi*=Bahia:
Adolph Hirsch & Co..... 175,000

JANUARY 4.—By the *Atrato*=Colombia:
Caballero & Blanco..... 2,500
Gravenhorst & Co..... 2,500
G. Amsinck & Co..... 2,500
A. M. Capen's Sons..... 2,500
J. Sambrada & Co..... 2,000
Mecke & Co..... 1,500
Roldau & Van Sickle..... 1,500
For London 3,000 18,000

JANUARY 5.—By *El Cid*=New Orleans:
G. Amsinck & Co..... 5,500
T. W. Morgan 2,500
Eggers & Heinlein..... 3,500
Wessels, Kulenkampff & Co..... 2,000
George A. Alden & Co..... 1,500 15,000

JANUARY 5.—By the *Pennsylvania*=Hamburg:
New York Commercial Co..... *75,000
Robert Badenhop 5,500 80,500

JANUARY 6.—By the *Mexico*=Trontera:
Harburger & Stack..... 2,500
E. Steiger & Co..... 2,500
General Export Comm. Co..... 2,000
E. Nelson Tibbals & Co..... 2,500
Hermann Kluge 2,000
Mexican Products Co..... 1,000 12,500

JANUARY 8.—By the *Santiago*=Tampico:
Continental-Mexican Rubber Co. *40,000
New York Commercial Co..... *34,000
Ed. Maurer *30,000
Arnold & Zeiss..... *22,500
For Europe *45,000 *171,500

JANUARY 8.—By the *Terence*=Bahia:
J. H. Rossbach & Bros..... 45,000
A. D. Hitch & Co..... 15,000 60,000

JANUARY 8.—By the *Albingia*=Colombia:
Maitland, Coppell & Co..... 4,500
R. del Castillo & Co..... 1,500
Iglesias, Lobo & Co..... 1,500
For London 2,000 9,500

JANUARY 8.—By *El Oriente*=Galveston:
Continental-Mexican Rubber Co..*125,000
In transit *22,500 *147,500

JANUARY 9.—By the *Allianca*=Colon:
G. Amsinck & Co..... 20,000
Piza, Nephews Co..... 3,500
Dumarest Bros. & Co..... 2,500
Roldau & Van Sickle..... 2,000
Mecke & Co..... 1,500
Wessels, Kulenkampff & Co..... 1,000 30,500

JANUARY 10.—By the *Bluecher*=Hamburg:
New York Commercial Co..... *50,000

JANUARY 10.—By the *Prinz Eitel Friedrich*=Colon:
G. Amsinck & Co..... 28,000
Isaac Brandon & Bros..... 23,000
Andean Trading Co..... 2,500
Pablo, Calvert & Co..... 2,500
Meyer Hecht 1,500
J. Sambrada & Co..... 1,500 59,000

JANUARY 12.—By *El Dia*=Galveston:
Continental-Mexican Rubber Co..... *55,000

JANUARY 12.—By the *Antilles*=New Orleans:
Manhattan Rubber Mfg. Co..... 10,000
G. Amsinck & Co..... 2,500
Eggers & Heinlein..... 1,500 14,000

JANUARY 13.—By the *Esperanza*=Frontera:
Harburger & Stack..... 5,000
E. Nelson Tibbals & Co..... 3,500
General Export Comm. Co..... 2,500
Wellard, Hawes & Co..... 1,000
Hermann Kluge 1,000
Mecke & Co..... 1,000 14,000

JANUARY 16.—By the *Colon*=Colon:
G. Amsinck & Co..... 13,000
Charles E. Griffin..... 3,500
E. Nelson Tibbals & Co..... 3,000
George A. Alden & Co..... 2,500
P. Eberling & Co..... 1,500
Lanman & Kemp..... 1,500
Isaac Brandon & Bros..... 1,000
Caballero & Blanco..... 1,000
J. Sambrada & Co..... 4,000 31,000

JANUARY 18.—By the *Momus*=New Orleans:
Meyer & Brown..... 5,000
T. W. Morgan 1,500
Eggers & Heinlein..... 1,000 7,500

JANUARY 18.—By the *Guantanamo*=Tampico:
Continental-Mexican Rubber Co.. *77,000
New York Commercial Co..... *34,000
Arnold & Zeiss..... *22,000
For Europe *95,000 *228,000

JANUARY 18.—By the *Trent*=Colombia:
Caballero & Blanco..... 9,000
Pablo Calvert Co..... 3,000
Maitland, Coppell & Co..... 2,000
A. M. Capen's Sons..... 1,500 15,500

JANUARY 19.—By the *Moltke*=Hamburg:
New York Commercial Co..... *13,500

JANUARY 20.—By the *Morro Castle*=Frontera:
L. Johnson & Co..... 3,500
Diamond Rubber Co..... 2,500
Harburger & Stack..... 2,500
American Trading Co..... 1,500
Graham, Hinkley & Co..... 1,000
G. Amsinck & Co..... 1,000 12,000

JANUARY 22.—By *El Mundo*=Galveston:

Continental-Mexican Rubber Co.		*65,000

JANUARY 22.—By the *Yumuri*=Tampico:

New York Commercial Co.	*135,000	
Ed. Maurer	*90,000	
Continental-Mexican Rubber Co.	*80,000	
For Europe	*55,000	*360.000

JANUARY 23.—By the *Siamese Prince*=Bahia:

Adolph Hirsch & Co.	90,000	
J. H. Rossbach & Bros.	20,000	
Arnold & Zeiss	11,000	121,000

JANUARY 23.—By the *Advance*=Colon:

G. Amsinck & Co.	16,000	
Wessels, Kulenkampff & Co.	2,000	
Piza, Nephews & Co.	2,000	
Dumarest Bros. & Co.	2,000	
American Trading Co.	2,000	
Gillespie Bros. & Co.	2,000	
Suzarte & Whitney	2,000	
Charles E. Griffin	1,000	
Mecke & Co.	1,000	30,000

JANUARY 23.—By the *Minnewaska*=London:

Arnold & Zeiss	80,000	
Ed. Maurer	34,000	
Muller, Schall & Co.	4,500	118,500

JANUARY 24.—By the *Prinz August Wilhelm*=Colon:

G. Amsinck & Co.	13,500	
L. Johnson & Co.	3,500	
Hirzel, Feltman & Co.	2,500	
Pablo, Calvert & Co.	1,500	
Maldonado & Co.	1,000	22,000

AFRICAN.

		Pounds.

DECEMBER 23.—By the *President Grant*=Hamburg:

George A. Alden & Co.	65,000	
Henderson & Korn	34,000	
Meyer & Brown	30,000	
W. L. Gough Co.	25,000	
R. Badenhop	15,000	
Ed. Maurer	11,000	
Rubber Trading Co.	11,500	
L. Blitz	5,000	196,500

DECEMBER 26.—By the *Campania*=Liverpool:

George A. Alden & Co.	22,500	
Ed. Maurer	9,000	
L. Blitz	7,000	38,500

DECEMBER 26.—By the *Celtic*=Liverpool:

Robinson & Co.	22,500	
General Rubber Co.	11,500	
George A. Alden & Co.	7,000	
W. L. Gough Co.	5,500	
J. T. Johnstone	5,500	
Rubber Trading Co.	4,500	
Ed. Maurer	5,500	62,000

DECEMBER 28.—By the *Mesaba*=London:

Robinson & Co.	45,000	
Henderson & Korn	7,000	52,000

DECEMBER 28.—By the *Finland*=Antwerp:

Meyer & Brown	34,000	
W. L. Gough Co.	20,000	
General Rubber Co.	7,000	
Henderson & Korn	7,000	68,000

DECEMBER 29.—By the *St. Laurent*=Bordeaux:

Arnold & Zeiss	11,500	
George A. Alden & Co.	2,500	14,000

JANUARY 2.—By the *Saxonia*=Liverpool:

Arnold & Zeiss	35,000	
General Rubber Co.	38,000	
Ed. Maurer	7,000	
George A. Alden & Co.	4,500	84,500

JANUARY 2.—By the *Agnella Ciampa*=Lisbon:

Arnold & Zeiss	45,000	
General Rubber Co.	22,500	
W. L. Gough Co.	11,000	78,500

JANUARY 3.—By the *Minneapolis*=London:

George A. Alden & Co.	141,000	
W. L. Gough Co.	11,500	
Rubber Trading Co.	7,000	159,500

JANUARY 3.—By the *Vaderland*=Antwerp:

Meyer & Brown	135,000	
General Rubber Co.	89,000	
Arnold & Zeiss	56,000	
W. L. Gough Co.	25,000	
Rubber Trading Co.	13,500	
Henderson & Korn	7,000	
In transit	35,000	360,500

JANUARY 4.—By the *Cymric*=Liverpool:

Arnold & Zeiss	45,000	
Ed. Maurer	13,500	
W. L. Gough Co.	15,000	73,500

JANUARY 5.—By the *Pennsylvania*=Hamburg:

George A. Alden & Co.	90,000	
Meyer & Brown	45,000	
Ed. Maurer	27,000	
Robert Badenhop	25,000	
W. L. Gough Co.	34,000	
Rubber Trading Co.	20,000	
Raw Products Co.	3,000	244,000

JANUARY 5.—By the *Lusitania*=Liverpool:

Ed. Maurer	11,000	
Arnold & Zeiss	17,500	28,500

JANUARY 8.—By the *Minnetonka*=London:

George A. Alden & Co.	17,000	
Ed. Maurer	15,000	
Arnold & Zeiss	11,500	
Robinson & Co.	7,500	
J. T. Johnstone	7,000	58,000

JANUARY 9.—By the *Zeeland*=Antwerp:

Meyer & Brown	25,000	
Muller, Schall & Co.	2,000	27,000

JANUARY 10.—By the *Bluecher*=Hamburg:

Ed. Maurer	25,000	
Arnold & Zeiss	22,500	
George A. Alden & Co.	11,500	
General Rubber Co.	9,000	
R. Badenhop	5,000	
Raw Products Co.	3,500	76,500

JANUARY 12.—By the *Florida*=Havre.

General Rubber Co.	125,000	
Ed. Maurer	30,000	
Arnold & Zeiss	13,500	
De Lagotellerie & Co.	7,000	
George A. Alden & Co.	5,500	181,000

JANUARY 15.—By the *Cevic*=Liverpool.

Arnold & Zeiss	45,000	
George A. Alden & Co.	11,000	
Ed. Maurer	9,000	
L. Blitz	5,000	
J. T. Johnstone	5,000	75,500

JANUARY 15.—By the *St. Louis*=London:

George A. Alden & Co.	8,000	
General Rubber Co.	8,000	16,000

JANUARY 15.—By the *Minnehaha*=London:

Charles L. Wilson	15,000	
Raw Products Co.	4,500	19,500

JANUARY 16.—By the *Franconia*=Liverpool:

Ed. Maurer	30,000	
J. T. Johnstone	34,000	
General Rubber Co.	22,500	
George A. Alden & Co.	11,500	
Arnold & Zeiss	2,000	100,000

JANUARY 17.—By the *Lapland*=Antwerp:

Meyer & Brown	7,000	
L. Blitz	8,0000	
W. H. Stiles	4,500	19,500

JANUARY 19.—By the *Moltke*=Hamburg:

George A. Alden & Co.	130,000	
General Rubber Company	11,000	
Ed. Maurer	9,000	
Robert Badenhop	4,500	154,500

JANUARY 20.—By the *Storfond*=Lisbon:

Arnold & Zeiss	45,000	
George A. Alden & Co.	11,500	
W. L. Gough Co.	11,500	68,000

JANUARY 22.—By the *Carmania*=Liverpool:

Ed. Maurer	34,000	
Arnold & Zeiss	33,000	
Robinson & Co.	40,000	
General Rubber Co.	13,500	
Raw Products Co.	3,500	124,000

JANUARY 23.—By the *Minnewaska*=London:

W. L. Gough Co.	8,000	
George A. Alden & Co.	4,500	
C. L. Wilson Co.	4,500	17,000

EAST INDIAN.

		Pounds.

DECEMBER 23.—By the *President Grant*=Hamburg:

Ed Maurer		*70,000

DECEMBER 26.—By the *Campania*=Liverpool:

Ed. Maurer	*33,500	
William H. Stiles	*11,500	*45,000

DECEMBER 26.—By the *St. Patrick*=Singapore:

Ed. Maurer	*22,500	
New York Commercial Co.	*6,000	
A. W. Brunn	*4,500	*33,000

DECEMBER 28.—By the *Mesaba*=London:

Arnold & Zeiss	*40,000	
Wallace L. Gough Co.	*7,000	
General Rubber Co.	*9,000	
A. T. Morse & Co.	*4,500	
New York Commercial Co.	*3,000	*63,500

DECEMBER 28.—By the *Finland*=Antwerp:

A. T. Morse & Co.		*27,000

JANUARY 2.—By the *Saxonia*=Liverpool:

Ed. Maurer	*48,000	
New York Commercial Co.	*7,000	
Meyer & Brown	*3,500	*58,500

JANUARY 3.—By the *Vaderland*=Antwerp:

Rubber Trading Co.	*25,000	
General Rubber Co.	*14,000	
Meyer & Brown	*13,500	
Henderson & Korn	*4,500	*57,000

JANUARY 3.—By the *Minneapolis*=London:

New York Commercial Co.	*95,000	
Arnold & Zeiss	*67,000	
James T. Johnstone	*15,000	
Henderson & Korn	*11,500	
Ed. Maurer	*10,000	
Meyer & Brown	*5,500	
In transit	*30,000	
Arnold & Zeiss	25,000	
Robinson & Co.	22,500	*281,500

JANUARY 4.—By the *Matoppo*=Colombo:

Meyer & Brown	*100,000	
New York Commercial Co.	*15,000	
Arnold & Zeiss	*7,000	*122,000

JANUARY 4.—By the *New York*=London:

Henderson & Korn	*18,000	
Ed. Maurer	*5,000	
Meyer & Brown	*11,000	*34,000

JANUARY 5.—By the *Lusitania*=Liverpool:

Meyer & Brown		*11,000

JANUARY 5.—By the *Pennsylvania*=Hamburg:

Meyer & Brown	*4,500	
Robert Badenhop	*5,000	
Rubber Trading Co.	*7,000	*16,500

JANUARY 8.—By the *Minnetonka*=London:

New York Commercial Co.	*35,000	
Arnold & Zeiss	*30,000	
Ed. Maurer	*10,000	*75,000

JANUARY 10.—By the *Bluecher*=Hamburg:

Ed Maurer		*15,500

JANUARY 11.—By the *Oceanic*=London!

Henderson & Korn	*40,000	
New York Commercial Co.	*30,000	
Arnold & Zeiss	*11,000	
Ed. Maurer	*9,000	
In transit	*15,000	*105,000

JANUARY 15.—By the *St. Louis*=London:

Arnold & Zeiss	*15,000	
New York Commercial Co.	*9,000	
L. Blitz	*5,000	*29,000

JANUARY 15.—By the *Minnehaha*=London:

General Rubber Co.	*225,000	
Ed. Maurer	*20,000	
W. L. Gough Co.	*11,500	
Henderson & Korn	*11,500	
Meyer & Brown	*8,000	
Arnold & Zeiss	*7,000	
Robinson & Co.	*1,500	*284,500

JANUARY 18.—By the *Olympic*=London:

Arnold & Zeiss	*15,000	
New York Commercial Co.	*10,000	
W. H. Stiles	*4,500	
Rubber Trading Co.	*3,500	
In transit	*80,000	*113,000

JANUARY 18.—By the *Karema*=Colombo:

New York Commercial Co.		*30,000

JANUARY 20.—By the *Erroll*=Singapore:

Malaysian Rubber Co.		*25,000

JANUARY 22.—By the *Carmania*=Liverpool:

Ed. Maurer	*30,000	
Henderson & Korn	*7,000	*37,000

JANUARY 24.—By the *Seneca*=Singapore:

W. L. Gough Co.	*20,000	
Haebler & Co.	22,500	
L. Littlejohn & Co.	15,500	
Arnold & Zeiss	11,000	
Ed. Maurer	11,000	80,000

JANUARY 23.—By the *Minnewaska*=London:

Arnold & Zeiss	*60,000	
New York Commercial Co.	*50,000	
Ed. Maurer	*40,000	
Meyer & Brown	*22,500	
J. T. Johnstone	*15,500	
Robinson & Co.	*4,500	
In transit	*50,000	
Robinson & Co.	11,000	253,500

GUTTA-JELUTONG.

		Pounds.

DECEMBER 23.—By the *President Grant*=Hamburg:

George A. Alden & Co.		45,000

DECEMBER 26.—By the *St. Patrick*=Singapore:

L. Littlejohn & Co.	380,000	
Haebler & Co.	180,000	
George A. Alden & Co.	65,000	
W. L. Gough & Co.	55,000	
A. W. Brunn	20,000	700,000

DECEMBER 30.—By the *Amsteldyk*=Rotterdam:

L. Littlejohn & Co.		125,000

JANUARY 5.—By the *Pennsylvania*=Hamburg:

Robert Badenhop		11,500

JANUARY 15.—By the *Minnehaha*=London:

L. Littlejohn & Co.		50,000

JANUARY 22.—By the *Erroll*=Singapore:

L. Littlejohn & Co.	265,000	
Haebler & Co.	165,000	430,000

JANUARY 24.—By the *Seneca*=Singapore:

L. Littlejohn & Co.	280,000	
Haebler & Co.	155,000	
W. L. Gough & Co.	125,000	
D. A. Shaw & Co.	110,000	
George A. Alden & Co.	125,000	
A. W. Brunn	45,000	840,000

GUTTA-PERCHA.

JANUARY 10.—By the *Bluecher*=Hamburg:

Robert Soltau & Co.		11,500

BALATA.

	Pounds.
DECEMBER 29.—By the *Korona*=Demerara:	
Ed. Maurer	8,000
JANUARY 2.—By the *Marowijne*=Bolivia:	
G. Amsinck & Co.	25,000
Middleton & Co.	5,000
Iglesias, Lobo & Co.	1,000
JANUARY 3.—By the *Minneapolis*=London:	31,000
Ed. Maurer	11,500

JANUARY 5.—By the *Pennsylvania*=Hamburg:

Robert Badenhop		3,500

JANUARY 8.—By the *Mayaro*=Trinidad:

Iglesias, Lobo & Co.	11,500	
Ed. Maurer	15,000	
Schutte, Bunemann & Co.	2,500	
Frame & Co.	1,500	30,500

JANUARY 10.—By the *Bluecher*=Hamburg:

Robert Badenhop		8,000

JANUARY 11.—By the *Coppername*=Demerara:

Middleton & Co.	5,500	
Schutte, Bunemann & Co.	5,500	
George A. Alden & Co.	4,500	
Iglesias, Lobo & Co.	4,500	
Bartling & DeLeon	7,000	27,000

BOSTON ARRIVALS.

	Pounds.
DECEMBER 15.—By the *Sagamore*=Liverpool:	
Arnold & Zeiss (African)	13,500
DECEMBER 15.—By the *Welsh Prince*=Singapore:	
State Rubber Co. (Jelutong)	65,000
L. Littlejohn & Co (Jelutong)	250,000
Wallace L. Gough Co. (Jelutong)	125,000 440,000
DECEMBER 18.—By the *Bohemian*=Liverpool:	
George A. Alden & Co. (African)	9,000

DECEMBER 20.—By the *Belgravia*=Hamburg:

George A. Alden & Co. (Central)	*45,000

DECEMBER 26.—By the *Winifredian*=Liverpool:

George A. Alden & Co. (African)	13,000

DECEMBER 21.—By the *St. Patrick*=Singapore:

State Rubber Co. (Jelutong)	125,000	
L. Littlejohn & Co. (Jelutong)	450,000	
Haebler & Co. (Gutta-Percha)	67,000	642,000

CUSTOM HOUSE STATISTICS.

PORT OF NEW YORK—DECEMBER.

Imports:	Pounds.	Value.
India-rubber	8,833,477	$7,200,378
Balata	74,768	50,807
Guayule	639,195	227,551
Gutta-percha	129,857	26,662
Gutta-jelutong (Pontianak)	4,849,196	221,420
Total	14,526,493	$7,726,818
Exports:		
India-rubber	49,532	$47,199
Balata	.....	.....
Guayule	13,718	5,595
Gutta-percha	.....	.....
Reclaimed rubber	96,281	14,768
Rubber scrap, imported	1,428,174	$107,444
Rubber scrap, exported	292,660	31,392

EXPORTS OF INDIA-RUBBER FROM PARA IN 1911 AND FOR FOURTEEN YEARS.

[The figures indicate weights in kilograms.]

	NEW YORK.					EUROPE.					
EXPORTERS.	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	TOTAL.
Gruner & Co.—Pará, Dusendschön, Zarges & Co.—Manáos	3,505,469	832,495	2,528,803	692,007	7,558,774	4,320,866	429,546	605,782	1,741,060	7,097,254	14,656,028
Ad. H. Alden, Ltd., Pará-Manáos	1,577,916	359,975	926,438	516,014	3,380,343	1,319,086	372,272	489,099	393,818	2,574,275	5,954,618
Gordon & Co., Pará-Manáos	1,108,322	184,067	585,291	52,319	1,929,999	1,273,869	269,265	345,130	534,123	2,422,387	4,352,386
Scholz Hartje & Co., Pará, Scholz & Co., Manáos	327,062	52,971	160,119	183,064	723,216	623,762	103,540	181,823	408,400	1,317,525	2,040,741
Suárez Hermanos & Co., Ltd.	.....	.....	.....	.....	.....	906,767	20,514	101,152	289,164	1,317,597	1,317,597
E. Pinto Alves & Co., Pará	201,646	10,076	420,707	40,197	672,626	302,813	36,569	59,688	62,373	461,443	1,134,069
J. Marques, Pará-Manáos	141,360	47,198	59,159	7,068	254,785	512,177	103,563	102,633	18,472	736,845	991,630
De Lagotellerie & Co., Pará-Manáos	274,494	43,894	220,051	.....	538,439	164,911	12,225	24,657	84,307	286,100	824,539
R. O. Ahlers & Co., Pará, Ahlers Co., Manáos	85,226	.....	25,128	138,431	248,785	280,083	3,348	52,125	82,191	417,747	666,532
Pires Teixeira & Co., Pará	141,950	4,590	97,020	330	243,890	170,971	315	69,795	154	241,235	485,125
Nunes Sobrinho & Co., Pará	107,610	5,610	40,920	.....	154,140	42,840	1,020	3,630	.....	47,490	201,630
Mello & Co., Pará-Manáos	.....	.....	10,162	1,125	11,287	95,310	24,497	7,953	29,187	156,947	168,234
The Alves Braga Rubber Estates & Trading Co., Ltd.	75,738	8,376	12,235	733	97,082	.....	.....	.....	.....	.....	97,082
A. de La Rivière Co., Pará	7,140	510	3,960	.....	11,610	39,209	3,152	28,524	2,016	72,901	84,511
J. G. Araujo & Co., Manáos	.....	.....	.....	1,830	1,830	40,083	8,213	41,978	1,066	91,340	93,170
E. Kingdom & Co., Manáos	.....	.....	.....	.....	.....	21,600	.....	8,560	3,920	34,080	34,080
Guilherme Aug. de Miranda filho, Pará	15,390	2,228	624	.....	18,242	5,086	690	2,090	129	7,995	26,237
S. A. Armazens Andreser, Manáos	.....	.....	.....	.....	.....	13,858	2,492	8,923	903	26,176	26,176
Günzburger Levy & Co., Manáos	288	190	584	3,645	4,707	2,504	208	322	.....	3,034	7,741
Braga Sobrinho & Co., Pará	.....	.....	.....	.....	.....	4,305	437	296	.....	5,038	5,038
Sundries	19,597	5,860	48,311	657	74,425	160,785	16,886	69,132	83,097	329,900	404,325
From Itacoatira direct	.....	.....	.....	.....	.....	51,120	7,243	36,522	2,515	97,400	97,400
From Iquitos direct	97,472	13,335	33,718	32,176	176,701	878,366	87,874	264,625	782,144	2,013,009	2,189,710
Total, 1911	7,686,680	1,571,375	5,173,230	1,669,596	16,100,881	11,230,371	1,503,869	2,504,439	4,519,039	19,757,718	35,858,599
Total, 1910	7,500,410	1,412,311	4,489,108	1,658,661	15,060,490	11,673,302	1,506,752	3,382,432	6,416,842	22,979,328	38,039,818
Total, 1909	9,439,722	1,767,310	5,784,170	2,655,778	19,646,980	9,832,613	1,372,221	2,950,626	5,649,763	19,805,223	39,452,203
Total, 1908	8,280,768	1,739,505	5,616,549	1,902,620	17,539,442	10,721,266	1,419,025	2,854,624	5,528,994	20,523,909	38,063,351
Total 1907	8,012,592	1,863,775	5,149,312	1,580,657	16,606,336	10,783,787	1,358,264	3,190,982	5,574,783	20,907,816	37,514,152
Total, 1906	7,406,171	1,785,315	5,496,419	1,531,399	16,192,304	9,289,310	1,253,574	3,223,944	4,799,623	18,575,451	34,767,755
Total, 1905	7,173,463	1,518,444	4,921,222	1,647,216	15,260,345	10,052,634	1,291,703	2,498,516	4,363,690	18,656,543	33,916,888
Total, 1904	8,062,104	1,630,355	5,394,429	1,222,580	16,309,468	7,615,817	993,955	2,503,520	3,221,376	14,334,668	30,644,136
Total, 1903	7,248,065	1,621,827	5,029,646	1,133,857	15,033,395	9,156,872	1,167,956	2,659,748	3,076,971	16,061,547	31,094,942
Total, 1902	6,588,524	1,614,776	4,523,413	1,133,155	13,859,868	8,522,521	1,514,521	2,595,177	2,057,222	14,689,912	28,549,780
Total, 1901	8,027,727	1,926,505	4,271,456	1,325,290	15,550,978	7,939,010	1,556,358	2,605,553	2,638,599	14,739,520	30,290,498
Total, 1900	6,557,277	1,199,611	3,783,279	894,500	12,434,667	7,798,537	1,401,390	3,256,969	1,857,100	14,313,996	26,748,663
Total, 1899	7,583,405	1,319,349	4,023,710	951,854	13,878,318	6,410,647	1,030,459	2,527,013	1,583,572	11,551,691	25,430,009
Total, 1898	5,399,654	868,982	2,759,714	801,915	9,830,265	6,794,541	1,125,688	2,995,801	1,162,712	12,078,742	21,909,007

CONSUMPTION OF INDIA-RUBBER BY THE UNITED STATES AND CANADA (IN TONS).

[From the Annual Statistical Summary of MEYER & BROWN, New York.]

DETAILS.	1898.	1899.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.
Imports to United States	18620	23095	20468	23208	21842	24760	27623	28635	29936	29433	29477	31129	32916	35088
Exports to Europe	150	300	450	680	430	490	274	357	1625	558	480	681	1340	823
	18470	22795	20018	22528	21412	24270	27349	28278	28311	28875	28991	30448	31576	34265
Add stock on January 1	744	591	712	1198	1399	331	256	305	537	365	606	1553	1332	523
	19214	23386	20730	23726	22811	24601	27605	28583	28848	29240	29603	32001	32908	34788
Less stock close of year	591	712	1198	1399	331	256	305	537	365	606	1553	1332	523	636
Deliveries to manufacturers	18623	22674	19532	22327	22480	24345	27300	28046	28483	28634	28050	30669	32385	34152

Imports of Guayule rubber, 8,091 tons for 1911.

INDIA RUBBER WORLD

VOL. 45. FEBRUARY 1, 1912. No. 4.

TABLE OF CONTENTS.

Editorial:

	Page.
Rubber and the West Indian Conference	207
Two Addresses Before the Rubber Club	207
Prospects of Rubber Production and Consumption	208
Increased Malaya Rubber Exports a Reality	208
Rubber and the Abandoned Farm	208
The Day of Plastic Masses	209
Minor Editorial	209
Coagulating by Carbonic Acid—*Wilhelm Pahl*	211
[With 1 Illustration.]	
Rubber Planting at the London International Rubber Congress	213
Thirteenth Annual Banquet of the Rubber Club of America.	215
[With 6 Portraits and a Full Page Picture of the Banquet.]	
Tires in Garden and Palace	221
The India Rubber Trade in Great Britain—*Our Regular Correspondent*	230
London Rubber Notes—*Special Correspondent*	235
The Rubber Industry of Japan—*Special Correspondent*	235
[With 3 Illustrations.]	
Some Notes on Rubber Planting	239
The Obituary Record	240
[With Portrait of Franklin Farrel.]	
New Rubber Goods in the Market	243
Recent Patents Relating to Rubber	251
[United States. Great Britain. France. Germany. Belgium.]	

Miscellaneous:

Brazilian Conditions	210
Plantation Versus Wild Rubber	210
The Agricultural Conference at Trinidad	214
Banquet of the Motor Accessory Manufacturers—*Illustrated*	223
Estimates Dividends of English Rubber Companies	232
The North British Rubber Co., Limited—*Illustrated*	233
Some Rubber Interests in Europe	234
Suggested Charges in Government Rubber Specifications	234
Notes from British Guiana—*Special Correspondent*	237
New Trade Publications	241
A New Hose Mold—*Illustrated*	242
A New Sectional Rubber Squeeze Roll—*Illustrated*	242
News of the American Rubber Trade	245
[With 3 Illustrations.]	
The Trade in Boston	223
The Trade in Akron	224
The Trade in Rhode Island	225
The Trade in Trenton	227
The Trade in Chicago	227
The Trade in San Francisco	228
Review of the Crude Rubber Market	253

CHANGES IN PARA AND MANAOS FIRMS.

UNDER date of December 31, 1911, Messrs. Gruner & Co., of Pará, and Messrs. Dusendschön, Zarges & Co., of Manáos, announced by joint circular the extinction of those firms, in consequence of the expiry on the date named of partnership contract.

By annexed circular of January 2, 1912, the formation is announced of two new firms, Messrs. Zarges, Berringer & Co., Pará; and Messrs. Zarges, Ohliger & Co., Manáos, who will continue the business of the above-named firms, whose assets and liabilities they assume. Messrs. Heilbut, Symons & Co., of London and Liverpool, become special partners in both firms. The management of the Manáos house is in the hands of Mr. Emil Albert Zarges and Mr. Hugo Ohliger, while that of the Pará house devolves upon Mr. Franz Christian Adolf Berringer, these three gentlemen being the general partners in the new firms.

Antwerp.

RUBBER STATISTICS FOR DECEMBER.

DETAILS.	1911.	1910.	1909.	1908.	1907.
Stocks, Nov. 30...*kilos*	634,262	568,148	735,616	604,170	1,015,282
Arrivals in December.	451,314	300,703	315,997	520,182	219,544
Congo sorts	321,169	234,673	215,983	454,701	190,000
Other sorts	130,145	66,030	100,014	65,481	29,544
Aggregating	1,085,576	868,851	1,051,613	1,124,352	1,234,826
Sales in December....	410,838	280,639	510,101	528,617	227,932
Stocks, December 31..	674,738	588,212	541,512	595,735	1,006,894
Arrivals since Jan. 1..	4,335,813	4,058,676	4,685,958	5,035,344	5,054,473
Congo sorts	3,175,581	3,105,357	3,492,332	4,262,531	4,346,141
Other sorts	1,160,232	953,319	1,193,626	772,813	708,332
Sales since Jan. 1....	4,249,387	4,011,974	4,740,181	5,446,503	4,705,763

RUBBER ARRIVALS FROM THE CONGO.

DECEMBER 7.—By the steamer *Elisabethville:*

Bunge & Co.	(Société Generale Africaine) *kilos*	65,700	
do	(Comptoir Commercial Congolais)	4,400	
do	(Chemins de fer Grands Lacs)	2,400	
do	(Cie. du Kasai)	57,500	
Société Colonial Anversoise	(Belge du Haut Congo)	260	
do	(Cie. du Lomami)	3,400	
L. & W. Van de Velde,	(Société Comm. and Financ. Africaine)	1,300	
do		4,000	138,960

Plantation Rubber from the Far East.

EXPORTS OF CEYLON GROWN RUBBER.

[From January 1 to December 18, 1909 and 1910. Compiled by the Ceylon Chamber of Commerce.]

	1910.	1911.
To Great Britain.....*pounds*	1,495,071	3,374,226
To United States	1,480,693	1,807,085
To Belgium	66,114	729,174
To Australia	5,030	47,547
To Japan	3,246	56,000
To Germany	14,203	48,254
To Canada	7,476	18,871
To Holland	.....	12,893
To Italy	1,909	8,460
To Austria	1,041	6,648
To India	.....	3,216
To Straits Settlements	.....	196
To France	.....	117
To Africa	.....	35
Total	3,074,783	6,112,722

[Same period 1909, 1,332,055 pounds; same 1908, 790,815.]

TOTAL EXPORTS FROM MALAYA.

[From January 1 to dates named. Reported by Barlow & Co., Singapore. These figures include the production of the Federated Malay States, but not of Ceylon.]

FROM—	1909.	1910.	1911.
Singapore (to Nov. 30)...*pounds*	2,348,271	3,512,787	6,009,206
Penang (to Nov. 26).....	1,976,843	2,234,569	4,547,062
Port Swettenham (to Sept. 30)..	.....	5,946,053	8,525,001
Total	4,325,114	11,693,409	19,081,269

Rubber Receipts at Manaos.

	November.		
FROM—	1911.	1910.	1909.
Rio Purús-Acre .....*tons*	581	788	1,579
Rio Madeira	470	468	310
Rio Juruá	249	104	322
Rio Javary-Iquitos	433	348	480
Rio Solimões	167	152	225
Rio Negro	17	12	76
Total	1,917	1,872	2,992
Caucho	170	237	357
Total	2,087	2,109	3,349
For Shipment from			
Manáos	1,733	1,532	2,322
Pará	354	577	1,027
Total	2,087	2,109	3,349

Liverpool.

WILLIAM WRIGHT & CO. report [January 5]:

Fine Pará.—The demand on the whole has been good, especially during the last six months, deliveries to the trade (Europe and America) during that period showing the large increase of 6,141 tons. During the first six months of 1911 heavy fluctuations took place owing to speculative holdings; these having been cleared, prices have settled down to a reasonable level, and the year closes with the prospect of a good demand and moderate fluctuations.